DOCUMENT RESUME

ED 043 573	24	SP 004 201

AUTHOR	Cruickshank, Donald; And Others
TITLE	The Ohio State University Analysis of the Nine Comprehensive Elementary Teacher Education Models (CETEM). Final Report.
INSTITUTION	Ohio State Univ., Columbus. Coll. of Education.
SPONS AGENCY	Department of Health, Education, and Welfare, Washington, D.C. National Center for Educational Research and Development.
BUREAU NO	BR-5-8040
PUB DATE	28 Feb 70
CONTRACT	OEC-0-9-458040-4732
NOTE	290p.
EDRS PRICE	EDRS Price MF-$1.25 HC-$14.60
DESCRIPTORS	Elementary School Teachers, *Models, *Teacher Education
IDENTIFIERS	CETEM, *Comprehensive Elementary Teacher Education Models

ABSTRACT

This document reports a series of 13 seminars conducted to review and analyze the nine United States Office of Education (USOE) Phase I Comprehensive Elementary Teacher Education Models (CETEM). The main body of the report consists of 14 papers, each an analytical summary of one of the model programs. Each paper is organized according to the same 12 criteria; 1) Rationale, 2) Components, 3) Outcomes, 4) Instructional Techniques and Processes, 5) Role of the Teacher Educator, 6) Evaluation Techniques, 7) Responsiveness to Societal and Professional Needs, 8) Unique Contributions, 9) Model Revision, 10) Relationship to General Education, 11) Feasibility, and 12) Relationship to Recommended Standards in Teacher Education (NCATE). There are three papers on the Syracuse University Model; two each on the Florida State University, Northwest Educational Regional Laboratory, and University of Pittsburgh Models; and one each on the others: Columbia University Teachers College, University of Georgia, University of Massachusetts, Michigan State University, and the Ohio Consortium. The papers were written by ten graduate students (who took the seminar for credit) and four faculty members who were among the seminar participants. An introductory section contains 1) brief description of the procedures for the seminars (one conducted by each of the nine model directors), and 2) discussion of general reactions to the models with comments designed to bridge the analytic summaries. (JS)

APR 6 1970

ED0 43573

Final Report

Research Foundation Project No. 2865

Grant No. OEC 0-9-458040-4732

U.S. DEPARTMENT OF HEALTH, EDUCATION
& WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

THE OHIO STATE UNIVERSITY ANALYSIS
OF
THE NINE COMPREHENSIVE ELEMENTARY TEACHER EDUCATION MODELS (CETEM)

Donald R. Cruickshank with others

Columbus, Ohio

February 28, 1970

The research reported herein was performed pursuant to a grant with the Office of Education, U. S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
National Center for Educational
Research and Development

SP004201

CONTENTS

Introduction Section

Summary i

Purpose of the Study ii

Need for the Study ii

Procedures iii

Results vii

Body

Analysis of the Elementary Teacher Education Models 1

SUMMARY

The Ohio State University conducted a series of seminars centered upon the nine USOE Phase I Comprehensive Elementary Teacher Education Models (CETEM). Each of the program models was presented and subsequently analyzed according to twelve criteria as follows: Rationale, Components, Outcomes, Instructional Techniques and Processes, Role of the Teacher Educator, Evaluation Techniques, Responsiveness to Societal and Professional Needs, Unique Contributions, Model Revision, Relationship to General Education, Feasibility, and Relationship to Recommended Standards in Teacher Education (NCATE). Fourteen analytical papers resulted.

In general, the program models can serve as useful references to those interested in developing new teacher education thrusts. The potential user would do well to give attention to various program model summaries first in order to determine whether time should be spent probing the comprehensive and cumbersome Phase I final reports.

PURPOSE OF THE STUDY

The purpose of the USOE grant was to provide The Ohio State University, one of the largest teacher producers, with the opportunity to review and analyze the nine elementary teacher education program models developed under the Bureau of Research CETEM (Comprehensive Elementary Teacher Education Model) program. Study of the nine program models is among several ongoing faculty activities that are directed toward revision of the pre-service program. Hopefully, the resultant report will be of some use to other institutions with similar changes in mind.

NEED FOR THE STUDY

Professional educators are aware of the ubiquitous need to change teacher education programs in order to meet the demands of dynamic societies. Seldom, however, is the response made more than a "catching up" and "hole plugging" activity. What seems to be needed are opportunities to plan totally up-to-date teacher education programs that are sensitive to the future and unencumbered by the past except by choice. The Faculty of Early and Middle Childhoold Education in the College of Education found itself in this opportune position in the fall of 1969.

One of the richest and relatively untapped resources for ideas in program building available at that time was the set of nine CETEM program models. The need to study and to "mine" the program models became evident to the faculty very early.

PROCEDURES

Initially twelve criteria were developed and used to examine all the program models in a consistent way. The criteria were:

1. Rationale. Is there a rationale for the program? What is it? How was it established? How is it supported by logic, experience, research, or other?

2. Components. What are the components (programmatic parts) of the model? Is there an obvious relationship between the rationale and the emerging program components? Are specific rationales available for each component? How consistent does the program model seem to be?

3. Outcomes. What kinds of teachers or other personnel are to be produced? What other outcomes, if any, exist?

4. Instructional Techniques and Processes. What instructional techniques and processes are suggested? What rationale exists for these?

5. Role of the Teacher Educator. How will the teacher function in the new program?

6. Evaluation Techniques. What evaluation techniques are suggested? What rationale exists for these?

7. Responsiveness to Societal and Professional Needs. In what ways is the program model responsive to societal and professional needs or concerns? For example, does the program prepare teachers for the disadvantaged? Does it prepare early childhood education personnel? Does it attend to needs of in-service teachers? Provide for differentiated staffing? Provide teachers with skills in utilization of educational technology?

8. Unique Contributions. What are some unique contributions the program model seems to make?

9. Model Revision. What provision does the program model make to keep the program current?

10. Relationship to General Education. How is the program model related to the general education (liberal arts) program?

11. Feasibility. How feasible does implementation appear to be on a large campus such as The Ohio State University? What seem to be the major problems in implementation?

12. Relationship to Recommended Standards in Teacher Education (NCATE). How does the program model stand up to scrutiny using the newly proposed NCATE standards?

Shortly after establishing the criteria, the nine program model directors were contacted and asked to visit the OSU campus for two days. During that time they were invited to conduct a two and one-half hour seminar and, upon request, to meet with graduate classes and conference with individuals or small groups.

The seminar was the major activity. Faculty, graduate students, local school officials, and the State Education Department all were asked to send participants. Faculty from the University of Akron also attended some meetings. Generally the group size averaged twenty-five to thirty. Seminar participants were provided with several resources including the following:

1. Summaries of the CETEM program models prepared and submitted with the Phase I USOE reports. The summaries were bound together in the order of the seminar presentations and hereafter are referred to in footnotes as Summaries of the METEP models.

2. Copies of the original Phase I final reports both in hard cover and on microfiche.

3. A paper "Some Comments on Nine Teacher Education Models" by Harry Silverman and Beverly Kooi, presented at the annual meeting of AERA in Los Angeles in February 1969.

4. Copies of the newly proposed National Council for Accreditation in Teacher Education (NCATE) Standards.

5. The Stanford University report by Dr. F. Shaftel entitled "The Stanford Evaluation of Nine Elementary Teacher Training Models."

6. Analytic Summaries prepared by Systems Development Corporation.

Participants could enroll in the seminar series for university credit. The ten graduate students who did were asked to study one model in depth and to write a paper analyzing the program model according to the criteria set forth earlier. In addition, four faculty members chose to do an in-depth analysis. The fourteen resultant analytic summaries form the main body of this report.

Following is the list of seminar meeting dates and presenters.

1.	Thursday, October 2	Dr. James Steffensen USOE Project Director
2.	Thursday, October 9	Dr. Wilford Weber Syracuse University
3.	Thursday, October 16	Dr. Horton Southworth University of Pittsburgh
4.	Thursday, October 23	Dr. G. W. Sowards Florida State University
5.	Wednesday, October 29	Dr. J. M. Cooper University of Massachusetts
6.	Thursday, October 30	Dr. Bruce Joyce Teachers College, Columbia
7.	Thursday, November 6	Dr. Greg Trzebiatowski University of Toledo*
8.	Thursday, November 13	Dr. W. R. Houston Michigan State University
9.	Thursday, November 20	Dr. C. E. Johnson University of Georgia
10.	Thursday, December 4	Dr. H. Del Shalock College of Education, Monmouth, Oregon
11.	Thursday, December 11	Dr. Karl Massanari, Review of Proposed NCATE Standards

Note that two additional seminars were held. Dr. James Steffensen, director of the CETEM, program, began the series providing an overview. Dr. Karl Massanari, Associate Secretary for AACTE concluded the series by assisting particpants as they looked at the program models in juxtaposition with the proposed revised NCATE Standards (Criterion 12).

*Trzebiatowski of Ohio State University replaced Dean George Dickson, University of Toledo, who was unable to attend because of illness.

Program model directors generally conducted their seminars in two parts. First, an overview of the particular program model was presented. Second, the program model was discussed in terms of the twelve criteria. All sessions were video-taped. Some tapes still are available at The Ohio State University and can be viewed after permission is granted by the seminar leader.

* * *

Education 925.10 Model Programs in Elementary Teacher Education
Fall Quarter, 1969, Thursday 2:30-5:00 P.M. Room 208 C University School, Donald R. Cruickshank, Room 201 Arps Hall, Extension 2460.

I. Course Outcomes

Participants will:

- study the nine Model Elementary Teacher Education Programs (METEP).
- develop an analytic paper on one of the models which will take into account the twelve "Criteria to be Employed in METEP Model Analysis."
- attend the presentations on the nine models according to the calendar in order to interact with the model developers to clarify concerns related to the analytic paper or others.
- briefly compare and contrast the twelve models.

II. Materials

- METEP models (on microfilm) available on closed reserve
- METEP model summaries
- "Some Comments on Nine Elementary Teacher Education Models"
- newly proposed NCATE Standards

RESULTS

The tangible results of the seminar are the fourteen papers, each reacting to the twelve criteria. This section focuses on a few general reactions while working with the Phase I final reports and contains comments that bridge the analytic summaries.

With few exceptions the Phase I reports were badly written. They are filled with "educationese" and, beyond that, perform grave injustice to the English language. In fairness to the directors, their contracts did not permit time for adequate reporting. Consequently and unfortunately, few teacher education specialists will have sufficient motivation to attend to the reports for the time and with the intensity required to decipher the message. Realizing their shortcomings in this respect, the Bureau of Research (now the National Center for Educational Research and Development) commissioned Systems Development Corporation to provide documents intended to clarify what the program models attempt to say.[1] In addition, the ERIC Clearinghouse on Teacher Education currently has prepared an index for use with the programs.[2] Whether or not the final reports could be rewritten to be made more concise and clear is a significant question.

Partly as a consequence of the verbosity and lack of clarity in the Phase I documents, persons working on any of the summaries or analyses have had a formidable, if not almost impossible, task. Specifically, both doctoral students and faculty members of The Ohio State University were required to put enormous amounts of time into preparation of their analyses only to be dissatisfied with the results. The project director and the editor assigned to prepare the analyses for printing both admit that this was the most frustrating writing experience ever encountered. Each paper was written and rewritten until nerves frayed. Consequently, no paper contained herein is seen by any means as a finished product. Rather, each is a reflection of the status of the analysis at the moment of final frustration.

General Reactions to the Models

Rationale. There seem to be at least eight ways which can be used to develop the rationale for a teacher education program. Perhaps the most common approach taken by the designers was to develop assumptions that had implications for developing the teacher education curriculum. Utilizing the Syracuse report, we find statements such as:

---

[1] Systems Development Corporation, Analytic Summaries of Specifications for Model Teacher Education Programs, Final Report Contract OEC-0-9-569006-3704(010), Falls Church, Virginia: The Corporation, 1969.

[2] Joel L. Burden and Kaliopee Lanzellotti (Eds.), A Reader's Guide to the Comprehensive Models for Preparing Elementary Teachers, Washington, D. C.: ERIC Clearinghouse on Teacher Education, 1969.

> "...teachers educated today must be educated to be continually self-renewing as they adopt to and play a major role in shaping the changes that seem certain...."
> "...the product...should be a teacher with the skills, knowledge, and feeling states needed for being an effective elementary teacher in 1974."[3]

Utilizing the two examples above, it is reasonably clear that among other things, meanings are vague and perhaps the assumptions themselves can be disputed. When operating from assumptions, terms require behavioral definition. What is meant by "self-renewing teachers"? What will self-renewing teachers do to be identifiable as such? Also, what is meant by "an effective teacher in 1974"? What will teachers do to be identifiable as such? Doesn't the evaluation of the product rest on the clarity with which the characteristics of the product can be observed and measured?

The study done by Brickell[4] would seriously dispute the contention that teachers play a major role in change. He did not find this to be true.

When using the "assumption approach," it is incumbent upon the designers to define terms operationally and to have evidence that the assumption is, in fact, true. Program models based on vaguely defined or questionable assumptions can only give rise to faulty or inadequate curricula experiences for would-be teachers. Fortunately, these examples are not representative of the Syracuse or any other program, but they point out serious concerns for all of us involved in developmental activities.

Another seeming weakness with the "assumption approach" as used is that most assumptions are related to the way we prepare teachers (process) rather than what we teach them (content). In fact, when looking at programmatic features or components of the program model, one is hard pressed in many cases to find a relationship between the content areas and the overall program rationale. In other words, content sometimes appears full-blown with little justification or acknowledgement of where it came from.

A second alternative for establishing the rationale might be called the "child behavior approach." Georgia and the Northwest Regional Laboratory serve as examples. Each concerned itself with determining what children must do in order to learn and then extrapolated antecedent teacher behaviors. Quotes from the Georgia and Northwest Laboratory reports may serve to illustrate this approach.

---

[3] Summaries of METEP Models, The Ohio State University (mimeographed) p. 32, 33.

[4] Brickell, Henry M., Organizing New York State for Educational Change, Albany, New York: Fund for the Advancement of Education of the Ford Foundation, 1961, pp. 22-26.

> "The analysis of the teacher's job began with a determination of goals for the elementary school. This was followed by the identification of objectives which would translate into the school setting. Objectives were developed in each content area....How the pupil behaves in order to achieve the learning objectives was determined. These learning behaviors provided the basis for determining teacher behaviors."[5]

and,

> "The ComField model specifies that each prospective teacher demonstrate the ability both under simulated and live conditions to effect changes in the behavior of pupils that reflect the outcomes desired for them."[6]
>
> "...In order to move through the program they have to establish desired pupil outcomes, or order events to bring them about, assess progress to see if desired outcomes are being reached, and, if they are not, modify events until they are."[7]

Other approaches taken by the designers included (1) the "goals approach" taken by the Ohio Consortium, which developed its program by extrapolating from broad educational goals and position papers; (2) the "theme approach" perhaps akin to a postulate or assumption approach as Pittsburgh's "Individualization has been an ageless dream of the schools of America,"[8] Teachers College's "To prepare a teacher who will be an innovator,"[9] or Michigan State's "teacher as a clinician"; (3) the "futures approach," which although espoused by all program models is made explicit in few, and (4) the "experts approach," which draws upon theoreticians and researchers as Michigan State, in part, draws upon Ianni and others.[10]

Taken as a whole, the program models perhaps are weakest in developing and testing adequate rationales in support of program components.

Components and Programmatic Features. Generally, the models can be divided into two categories, those that prepared specifications from which program components would be generated, and those which went ahead and developed courses, components, and modules or other designations for curricular experiences. This section will briefly outline alternatives presented by institutions taking the latter course.

---

[5] Summaries, op. cit., p. 116.

[6] Ibid., p. 141.

[7] Ibid., p. 143.

[8] Ibid., p. 2.

[9] Ibid., p. 71

[10] Ibid., p. 101

All programs indicated the need for general education or liberal arts studies.* Beyond that, however, they called for changes in both content or process in the professional education sequence. Some features of content and process include the following:

Early awareness and involvement
Simulation
Microteaching and mirror teaching
Self-pacing
Performance criteria
Theory-practice contiquity
Observational systems
Programmed instruction including CAI
Individually prescribed instruction
Sensitivity training
Child development
Methods of teaching
Human learning
Styles of inquiry
Clinical experiences
Curriculum building
Diagnosis of learning difficulties
Problem-solving and decision-making
Interpersonal relations
Study of self
School social and cultural dynamics
Self-direction
Evaluation
Media or educational technology
Differentiated staffing
Role theory
Tutorial

This list is presented in no particular order and, in the mind of the reader, many of the program characteristics may overlap. Perhaps too, many if not most of the features of the program models will be seen as not radical departures from what we have been talking about in teacher education for a decade or more. What is important is that the talk about teacher education finally is merging with program design. Should Phase III be conducted we would have prototypes of notions that until now have existed only at the conceptual level.

---

*Within general education special stress was placed upon studying the behavioral sciences.

Outcomes. For purposes of inspection, the outcomes sought can be placed arbitrarily into three categories. The first category is termed "changes in self." All the program models sought, directly or indirectly, to change the self-concepts of their students. Indicative are anticipated outcomes that teachers would (1) develop positive concepts of self as a teacher, (2) understand and accept their motivation for selecting a career in teaching, (3) develop professional values consistent with personal integrity and the demands of education, (4) develop commitment, (5) exhibit warmth and empathy, and (6) be self-directed.

A second category of outcomes can be designated "changes in knowledge and skill." Included under this rubric would be that teachers would (1) be more perceptive, (2) be well-versed in the humanities, social and natural sciences, (3) be skilled in the diagnosis and resolution of problems, (4) be specialized in a content area, (5) be able to individualize instruction, (6) possess increased skill in human relations, (7) be students of human learning, (8) be a model of creative teaching, and so forth.

Finally outcomes are sought that have to do with the "role of the teacher." Included would be the teacher as (1) an innovator, (2) a specialist within a specialized staff, and (3) an agent of social change.

Obviously, listings such as these are guilty of both omission and oversimplification. Even with these shortcomings it is evident that the designers expect more and different things of the teacher education major and of his program.

Instructional Techniques and Processes. A wide range of instructional techniques and processes are suggested. Among those mentioned are simulations, computer assisted instruction, independent study, microteaching, small group and tutorial instruction, individualized instruction, utilization of self-pacing, lecture, programmed instruction, mirror teaching, role playing. Mentioned most frequently are simulations and utilization of microteaching or similar experiences. Mentioned least often are the commonly used practices of lectures and the lecture-discussion combination. It could be inferred that the designers were more interested in instructional techniques which involve the learner and expect participation and demonstration of behavior from him.

Role of the Teacher Educator. A great deal of similarity exists among the program models with regard to the role of the teacher educator. Generally, there is emphasis upon the teacher as a counselor, a curriculum and materials developer, and an instructional leader but in settings unlike the traditional lecture arrangement.

Almost all program models make noticeable efforts to personalize the teacher training experience--to increase the quality of student-faculty interaction. Much of this is accounted for in quasi-counseling kinds of arrangements. Faculty work with students in more elaborate and extensive orientation settings, help them choose from alternative learning experiences, monitor their progress, and maintain academic records. Focus appears to be on humanizing the learning process and helping the student to succeed.

Staff differentiation is called for and the teacher education faculty is seen as composed of a variety of specialists, many of whom would not have the doctorate. Teacher training programs would call upon local school personnel more frequently but in addition would utilize the services of those in educational industries and educational laboratories. Particularly, specialization seems to be called for in the development of new curricular materials and clusters of similar experiences referred to as modules.

In the role of instructional leader, the teacher educator is seen as one who, instead of fundamentally lecturing, conducts microteaching sessions, presents simulations, engages in tutorials, and generally involves himself in greater interaction with students on a more intimate basis. Lectures are not eliminated but seem to be relegated to a less significant position on the instructional continuum.

Teacher educators often are pictured in team relationships. The one professor to one class standard is hardly mentioned.

In addition, the designers see future teacher educators: conducting sensitivity training, collecting and making video- and audio-tapes of outstanding professors, setting up overseas experiences for students, and working with students organized in inquiry groups.

Evaluation Techniques. Decision makers working with students in the program models will have a much greater data base upon which to reflect. The progress of each learner will be monitored more carefully and almost all programs provide for maintenance of a student data bank.

All programs intend to make quite clear what the student must learn. Such intentions take the form of behavioral or performance objectives. Upon entering into a new learning activity, the student normally is given a pretest. Depending upon performance on the pretest, the student may be referred for additional prerequisite training, be permitted to enter the training experience at one of many starting points, or, if mastery is demonstrated, go on to another learning task.

Posttests, which can be taken whenever the learner feels he can demonstrate proficiency, permit learning to be individualized in terms of pacing.

Generally, evaluation is based upon demonstration of behavior rather than performance on traditional paper-and-pencil tests.

Responsiveness to Societal and Professional Needs. The program models give more attention to providing for needs established by the education profession than to determining societal needs and responding to those. Several of the programs suggest that they will prepare teachers who can cope with or even facilitate societal change while only a few identify current areas of societal need to which teacher education programs might reasonably be expected to respond directly. Not much is said about preparing teachers for work with non-white children in inner-city schools. Neither is general concern directed toward pre-school and parent education.

However, the programs do react to concerns expressed by educationists. Attention is given to needs including (1) individualizing instruction, (2) elimination of the dichotomy between pre- and in-service education, (3) preparing elementary personnel as specialists both in terms of an area and level of instruction, (4) increased utilization of the public school as the training setting, (6) establishment of educational consortia, and (7) cross-cultural training.

Unique contributions. One could develop a sizable list of somewhat unique contributions the program models would make if implemented. A few have been mentioned in previous sections. They include:

Replacement of formal courses with modules or other forms built upon performance objectives
Provision for individual differences in both style and pace of learning
Synthesis of theory and practice
Further development of the notions of teaching centers and portal schools
Provision for management of teacher education as a necessary support system
Provision for faculty retraining
Preparing the teacher to both cope with and facilitate change
Establishment of teacher education training consortia
Utilization of newer technologies and methodologies implicit in microteaching and simulation
Stress on staff differentiation and staff teaming
Broad preparation in the behavioral sciences
Evaluation based upon demonstrated performance
Stress on knowing, understanding, and accepting one's self as a person and teacher

Utilization of systems analysis
Provision for early engagement and career choice activities
Emphasis on learning to be a better classroom problem solver
Engaging students in setting their own goals and monitoring
    progress toward them

One could go on summarizing the analyses. At this point it would be well for the reader to make some of his own judgments. The individual analyses follow and are presented alphabetically by institution.

The views presented in this report are not those of either the Office of Education or The Ohio State University. Instead, they reflect individual attempts to draw meaning from the Phase I documents. The writers were asked to use as few footnotes as possible and consequently credit is not as noticeable as it should be.

We who have worked on this project are rewarded that we have had the opportunity to be exposed to and to think about the product of this USOE effort.

Donald R. Cruickshank
February 15, 1970

TEACHERS COLLEGE, COLUMBIA UNIVERSITY PROGRAM MODEL

Analysis by Donald Uhlenberg

RATIONALE

Schools of today are being continually re-created. The emergence of new institutions of learning, new teacher roles, and new educational technologies are interacting to give us many more options for the future than we have had in the past. Rooted in the Columbia University Teachers College Program Model is the conviction that the teacher must participate in this re-creation. This person, the "teacher-innovator," will not only be prepared to operate within the existing institutions but will help create educational institutions of the future. The teacher-innovator will be an evolutionary in the schools of today. It is to the preparation of this person, the teacher-innovator, that the program is dedicated.

The basis of the rationale for this program stems from the idea that professional performance can be described in terms of control over certain areas of reality that are essential in developing creative teaching roles rather than just the ability to fill already defined ones. These areas of reality have been identified and defined in terms of four teacher roles that must be learned by the person who is to become the teacher-innovator.

The Interactive Teacher. The professional self-concept of the teacher depends on his belief in his ability to teach well. As an interactive teacher, the teacher-innovator possesses strategies for making instructional decisions that are tailored to the characteristics and needs of the students. He can work with groups of children to build effective democratic structures, provide technological assists to learning, and has interpersonal sensitivity to touch closely the minds and emotions of the students.

The Institution Builder. In this role the teacher-innovator works with other faculty members, community representatives, students, and administrators to design complete educational programs and organizational structures to bring them into existence.

The Innovator. As an innovator rather than a bureaucratic functionary, the teacher-innovator combines personal creativity with ability to work with others in order to build educational settings in which innovation rather than imitation is the norm. He has techniques for analyzing the social structure of the school and how it inhibits or facilitates creative behavior.

The Scholar. Continuous scholarship renews him and adds to knowledge about education. He controls techniques for studying the processes of interactive teaching and theories of learning. He controls structures for studying the school and for studying teaching and learning so he can design and carry out educational experiments. He hasters teaching strategies derived from different views of learning, and more important, controls techniques for developing and testing new ones.

The purpose, then, of the Teachers College Program Model is the creation of a performance model of the teacher-innovator based on these four teaching roles or areas of control over reality. The program is designed to help students gain the necessary skills and abilities to achieve this control.

COMPONENTS

The training program can be viewed in two different frameworks. One consists of general procedures which unify the program and are shared by all of its components. The second consists of four components, one developed around each of the four roles of the teacher-innovator, and each of them designed to yield control over the areas necessary to that role. The four components are *Interactive Teaching*, *Institution Building*, *Innovating*, and *The Teacher Scholar*.

General Procedures. First of all, the program cannot be effectively implemented without the creation of a particular kind of school-university setting in which many training experiences within the basic components take place. This school would be modeled after educational designs developed by Schaefer[1] and would operate as a center of inquiry; that is, it would study the processes of teaching and learning as well as carry them out. Because most of the activities in this teacher education program include research into teaching and learning, the success of the program depends on having such a center of inquiry.

The program is operated as a democracy with small, self-regulating units of students called "inquiry groups" who monitor their own progress and administer the program to themselves with the assistance of faculty counselors. The components are designed so that they are virtually self-administering and once the structure has been explained, the inquiry group, with the help of the faculty, negotiates its way through the activities.

A third element is the contact laboratory, which refers to provisions for the teacher candidates to be in contact with schools and children. Contact is provided to give the student the opportunity to study schools, teachers, and children and to master a wide repertoire of teaching strategies, practice making curricular and instructional decisions, and engage in educational experimentation.

---

[1] Robert J. Schaefer, *The School as a Center of Inquiry*, New York: Harper, 1957.

Finally, the program is based on the differential training model as conceived by David E. Hunt.[2] This model for individualizing instruction is intended to increase the learning of ideas and skills and to increase the personal flexibility of the student by modifying his educational experiences to take into account his competency level, feedback preference, value orientation, and cognitive structure.

The Interactive Teaching Component. The procedure in this component is to allow teacher candidates to learn the basic maneuvers of teaching by teaching lessons to each other and to children and then through feedback teams formed within each inquiry group, to evaluate each other's performance. The candidates then learn and master nine strategies of teaching based on the works of a variety of writers such as an inductive teaching strategy developed from the work of Hilda Taba and a nondirective model developed from the work of Carl Rogers on ways of helping students teach themselves, apply these teaching strategies within a particular curricular area, and finally develop and execute original strategies. Four subcomponents focus on different aspects of teaching. One focuses on instructional decision-making, another on mastering teaching strategies, a third on developing flexibility and sensitivity to learners, and the fourth on developing a social system in the classroom.

The Teachers College Program Model places as much emphasis on the teacher as a developer of curriculum, an organizer of technological systems, and a designer of the social system within the school as it does on his functions as an instructional decision-maker and interactive teacher. Teachers generally feel powerless to influence the overall shape of the school and as a result, accept it as it is. This component incorporates devices planned to build motivation for institution building such as democratic procedures, cooperative inquiry, and the inclusion of the candidates in the operation of the technical systems that facilitate their learning.

The Institution Builder Component. Under simulated conditions, the students practice institutional decision-making and concurrently study strategies for developing the curricular, technological, and social systems of schools. In connection with tutorial and small group teaching, they study and test curricular strategies within the areas of their specialty. Then they practice institution-building, planning and testing out curriculums, interpersonal climates, and support systems. In the inquiry school they study the institution-building techniques used there, especially the arrangements that permit scholarship and experimental teaching. Finally, their internship is organized in groups that try, within more common school settings, to carry out teaching as an experiential activity.

---

[2] David E. Hunt, "A Model for Analyzing the Training of Training Agents," Merrill Palmer Quarterly, Winter 1966.

The Innovator Component. This component begins by exposing the student as an apprentice to the school and permitting him to learn whatever roles are given to him by the teachers to whom he is apprenticed. As he learns the bureaucratic roles, he is helped to analyze both the bureaucratic process and the feelings of alienation he is supposed to be having. He studies the social system of the school and the ways in which it stabilizes itself and may prevent change and innovative activity.

Next, he works in a group carrying out exploratory and experimental teaching strategies. The inquiry group will hopefully become a reference group for its members--a group whose norms are experimentation and innovation. In the common cause members will support each other and help each other anchor the commitment to change and experimentation. They will study how to teach in non-bureaucratic ways and how to build a community of teachers and students devoted to "authentic and personal" learning experiences.

The Teacher Scholar Component. The rationale for this component is straightforward and logical but not based on any theoretical position. It relies on research indicating that teachers can learn to do thekind of analysis that is required, apply that analysis to their own teaching, and conduct experiments of their own teaching.

Two extensive subcomponents are involved in this component. One concentrates on the study of children and the other on the study of teaching. Activities involve analyzing teaching behavior using various observation systems and constructing small studies of teacher-learner interaction in which students study their own progress toward mastery of "moves and strategies" and develop experiments on the responses of children to teaching behavior.

OUTCOMES

The goal of the Teachers College teacher education program model is the creation of the teacher-innovator--a person who will be capable of developing new education even while he is executing the old. He must have flexibility, commitment, and a secure self-knowledge. He must have the skill and commitment to help create and test new educational forms. Because teacher roles will be changed many times in the future, he must be able to teach himself those new roles, to help shape the institutions in which he will work, and to try out many new educational ideas.

As discussed earlier, the concept of the teacher-innovator is defined by four teacher roles that correspond to the four basic components of the program model: the Interactive Teacher, the Institution Builder, the Innovator, and the Teacher Scholar.

The Interactive Teacher. He needs a wide range of teaching strategies for making and carrying out instructional decisions. He is qualified to work with groups of children to build effective democratic structures through which they can conduct their education. He is a student of individual differences and has the interpersonal sensitivity to touch closely the minds and emotions of the students and to modify his own behavior in response.

The Institution Builder. The teacher-innovator needs the capacity to resist the slide into routine. He must approach problems with interest and desire to be a creator of new things. In this role, he works with other faculty members, community representatives, students, and administrators to design and create complete educational programs and organizational structures. As a shaper of schools, he will know strategies for studying and designing curricula systems, analyzing and creating effective social systems in the school, and assembling and employing technical support systems that facilitate education.

The Innovator. To be an innovator, the teacher must be able to work with and lead others. He must understand the social forces that retard change and how to work with his peers to create innovative communities within what otherwise become bureaucratic organizations.

The Scholar. The teacher-innovator must be a competent scholar of teaching and learning. He needs a continuous relationship to the scholarly disciplines and other sources of man's knowledge. He must know what knowledge is from the point of view of the child in order to reach him.

INSTRUCTIONAL TECHNIQUES AND PROCESSES

To prepare a teacher who studies and tests educational ideas and forms, institutions that train teachers must themselves operate as centers of inquiry. This must be done to provide the teacher candidate with a model for institution building--to give him a concrete example of a community of teachers living as scholar-innovators. It is also necessary to prove to teacher candidates that such schools can be developed. As a result, the basic strategy in this program model is one of "cooperative inquiry."

The teacher candidates are organized into democratic "inquiry groups" of about twelve students. These miniature democracies are assisted by faculty counselors who help them to educate themselves. Each inquiry group includes "feedback teams," of three or four student who help each member by coaching, analyzing, and assisting each other during the program.

All activities take place in this democratic organization, which dominates the tone of the program and provides the matrix of the human relationships within which learning takes place. Because most students entering the teacher education program have had little opportunity to experience a democractically run educational institution, they have had no models or few models of democratically oriented procedures and those that they have had have usually been individual rather than institutional. Many do not feel they are making progress unless they have the sanction of a supervising teacher. They do not value their own judgment. Similarly, teacher candidates have, as a result of experience as students, internalized the bureaucratic role of the teacher and feel that this role is the proper one for a teacher. The remedy for this situation is to operate the teacher education program as a democratic community so that students will see one in action and learn by participating to take the roles that are required if a democratic model is to be effective.

The program model is based on the Differential Training Model of Hunt.[3] It provides for modification of educational procedures to take into account four characteristics of the teacher candidate: his competency level, feedback preference, value orientation, and cognitive structure. This allows for both increase in the learning of ideas and skills and personal flexibility of the teacher candidate.

It is assumed that training should be matched to the characteristics of the learner as well as to the objectives of the component. The rationale for differential training models is identical to the belief that the single most important aspect of teaching is the child and "where he is now." This program model may be seen as a "trainee centered" program. This differential training model is constructed not only to individualize instruction by pacing and to modulate training techniques according to the characteristics of the trainee, but also to increase the general flexibility of the teacher candidates.

To help someone become a teacher-innovator requires the building of a setting in which he can learn to innovate. The laboratory school must function as a center of inquiry in which the study of teaching and learning can take place. Through the sequence of the laboratory experiences, the teacher candidate can learn to understand children and schools and can develop the capacity to work with them. The contact laboratory gives the teacher candidates the opportunity to study schools, teachers, and children and to master a wide repertoire of teaching strategies, practice making curricular and instructional decisions, and engage in educational experimentation. The contact school sequence consists of apprenticeship, small group tutorial teaching, unit experimentation in inquiry school, experience in curriculum modes, and carrying on a program and internship.

---

[3] Ibid.

ROLE OF THE TEACHER EDUCATOR

A faculty member is assigned to each inquiry group. He functions as a general advisor, faculty counselor, and seminar leader. His primary job is to help the students help themselves.

The faculty member explains the goals of each component at the beginning and the means and support systems that have been assembled. He also explains the kinds of devices that have been developed to monitor progress and to help the student to obtain feedback on his development. From this point on, the students administer the components to themselves, reshaping and adapting them to fit their personalities. The faculty members serve as advisors, modifying their roles to apply the differential training model.

While the faculty leader must frequently play a nondirective role, he engages in four functions that are critical to the success of the program. First, he is responsible for helping the students understand the entire teacher education program. The students can hardly participate in the making of decisions if they do not know the framework within which they are operating. In the second case, the faculty member needs to see that each component is thoroughly explained to the student. Third, the faculty counselor must function to administer the differential training model. Fourth, the components require technical competencies that the candidate may not have in the early stages. The faculty member needs to provide the competency and then reduce his role as the student develops his own skill.

EVALUATION TECHNIQUES

Progress through each component can be evaluated by comparing the student's performance against three levels of objectives. At the first level, trainees learn to carry on teaching maneuvers or small units of teaching behavior that have a limited effect on children. In the second level, they learn several teaching strategies that are built on theoretical models of learning. These strategies are more complex than the maneuvers and more difficult to execute. At the third level, the trainee creates and executes teaching strategies himself. No clear program for evaluation of the program model is suggested in the report. However, two papers that suggest evaluation procedures are included. The first, by Dr. Thelma Baldwin of the Center for Research in Social Relations at Johns Hopkins University, discusses general evaluation problems and presents suggested illustrative evaluation schemes for two of the subcomponents of the Interactive Teaching Component: Models of Teaching and Flexibility Training.

The second paper, by Bruce Joyce and Richard Hodges, provides a specific example of the use of data banks to provide continuous and cumulative descriptive information about teacher candidates.

RESPONSIVENESS TO SOCIETAL AND PROFESSIONAL NEEDS

Because the role of the teacher will change in the future, the teacher must be trained to participate in the redefinition of these roles and to train himself to fulfill these roles. This program, through the concept of the teacher-innovator, would prepare the teacher to adjust to whatever role he may find. Consequently, there is no specific preparation for inner-city schools, teaching the disadvantaged, and the like. As a result of a training that emphasizes educational experimentation, the teacher-innovator will be prepared through the student of teaching and learning to work in the spirit of inquiry. Because there is no distinction between those activities involved in pre- and post-service training, specific formal training in the latter is eliminated.

UNIQUE CONTRIBUTIONS

Perhaps the most unique contribution the Teachers College Program Model makes to teacher education is the Inquiry Group approach. Opeating as a miniature democracy, the inquiry group learns about democratic procedures and has opportunities to put those learnings to use. Most teacher education programs, while using the concept of democratic education, do not in fact provide opportunities for teacher candidates to use these ideas. This program model operates as a democratic community so that students will see democracy in action and learn by participating to take the roles required for a democratic system to be effective and satisfying.

Also unique is the role definition of the faculty advisor in this program. He serves primarily to provide guidance and assistance but is available for direct leadership and performance feedback where necessary. His purpose is to provide support as needed but to gradually provide less and less until the teacher candidate essentially conducts his own education. Closely allied is the Differential Training Model in which the individual differences of the trainee are a prime consideration of the faculty member as well as the curriculum of the program model.

MODEL REVISION

Because this program model was designed as a device to look at teacher education and was not expected to be implemented as it is presented, there are no specific plans for program revision.

RELATIONSHIP TO GENERAL EDUCATION

The relationship of the program to general education is not discussed. The program model has been developed in such a way that it can be adapted to four-year undergraduate programs, five-year programs, two-year masters level programs, and to extensive graduate programs that require as much as three years of study.

FEASIBILITY

The bureaucracy of any large institution such as The Ohio State University makes the implementation of a new program such as the Teachers College Program Model a formidable task. Red tape, scheduling, and volumes of paper work, however, do not present as great a barrier as can a faculty itself. For unless the staff is willing and able to accept a new program, it is doomed to failure. Pessimism, conservativism, defensiveness, and plain laziness combine forces to serve as very real barriers to such an innovative program.

But even if the program were accepted by a faculty, there are any number of hurdles to overcome that are inherent in the program design. One of the most prominent is the requirement for contact laboratory schools to serve as centers of inquiry. Because of the large numbers of students that would be involved, probably all the surrounding schools in the area would have to be converted to inquiry schools to accommodate the program. In light of the present conservative attitudes of public school personnel, including teachers and administrators, combined with the ivory tower outlook of many university people, it appears to be a difficult if not an insurmountable problem.

A third major obstacle is the necessity for excellence on the part of the students and faculty alike. The program calls for dedication, commitment to change, a high degree of scholarship and leadership abilities among both. By the very nature of the field of public education, these qualities are not in abundance among those who are attracted to it.

RELATIONSHIP TO RECOMMENDED STANDARDS IN TEACHER EDUCATION (NCATE)

The Columbia University Teachers College Program Model was designed not as a program to be implemented as it is presented, but rather as a guide for further development of teacher education programs. Consequently, many areas of the NCATE standards are not applicable and are omitted below.

1. Curricula for Basic Programs

1.1 Design of Curricula

The fundamental goal of the program model is the creation of the teacher-innovator who meets those criteria that the program model identifies as crucial for a contemporary teacher to be effective. Competency is gained through training in four specific roles that constitute the four basic components of the program. Each component includes those elements defined in this standard.

1.2 The General Studies Component

The program model was designed to be adopted to any undergraduate program and therefore does not deal with general studies.

1.3 The Professional Studies Component

1.3.1 Content for the Teaching Specialty

In the curriculum section of the institution-building component and the instructional decision-making section of the interactive teaching component, the student learns the alternative patterns for curriculum and instruction within one traditional curriculum area of the school. Stress is placed on his mastering alternative systems for conceptualizing and organizing instruction within the curriculum areas. It is expected that each teacher will specialize in one curriculum area in order to provide him with an area of depth to which other learnings can be anchored and with an area of immediate competence once he is given the opportunity for responsibility in a school.

1.3.2 Humanistic and Behavioral Studies

There is no formal instruction in humanistic and behavioral studies. However, readings, discussions, and seminars are incorporated into each component of the program model to give the candidate opportunities to study these areas.

1.3.3 Teaching and Learning Theory with Laboratory and Clinical Experience

The underlying basis for the Teachers College Program Model is the study of teaching and learning. This study is accomplished through readings, games, simulation, microteaching, classroom observation, tutoring, and other experiential activities. Each component involves the teacher candidate in the study of teaching and learning in the contact laboratory with opportunities for experimentation and testing of teaching strategies and maneuvers.

1.3.4 Practicum

Phases five and six of the contact laboratory sequence allow the student to assume full teaching responsibilities in the classroom as prescribed in this standard.

1.4 Use of Guidelines Developed by National Learned Societies and Professional Associations

It is not clear to what extent guidelines were used in preparing this program model.

3. Students in Basic Programs

3.4 Student Participation in Program Evaluation and Development

Each inquiry group elects a member to a steering committee, which is composed of students, faculty, administration, and public school personnel, to determine the effectiveness of the basic components of the program and to suggest revision and alternatives for improvement.

5. Evaluation, Program Review, and Planning

5.1 Evaluation of Graduates

Evaluation is conducted through criteria established as behavioral objectives for each component. Students are expected to meet the criteria before progressing to the next step in the sequence. Successful completion of all the components indicates successful completion of the program.

5.2 Use of Evaluation Results to Improve Basic Program

No evaluation methods are stated for the program although two papers are presented suggesting possible alternatives.

THE FLORIDA STATE UNIVERSITY PROGRAM MODEL

Analysis by F. Helen Lewis

RATIONALE

"Teacher education, to be viable for 1978, should be designed to meet the conditions most likely to exist at that time." (vol. 1, p. 15) This statement briefly poses the rationale on which the Florida State program model is based. Although admittedly it is risky to try to predict the future, the model developers wrote position papers based on the best information available thatwould indicate trends in society, in education, and in the role of the teacher in 1978. From these predictions the following inferences about teacher education were drawn:

1. Only broadly educated persons of high ability will be able to meet the demands of elementary teaching and make the increasingly difficult decisions required of teachers.

2. The emerging role of the elementary teacher will require depth in at least one academic content area as well as a high level of competence in utilizing a large number of teaching strategies.

3. Teachers will have to be able to work effectively with other professionals and paraprofessional personnel.

4. The training program will be on a pre-service/in-service continuum.

5. The teacher must be flexible in adapting to the roles required in various educational environments.

From the first inference stated above, it appears that a program for training elementary teachers must produce persons who have not only an accumulation of learned skills, but, of equal importance, a maturity of judgment that comes only with structured knowledge and experience. Teaching is highly complex, and a comprehensive design for training persons to teach is even more complex. In order to produce large numbers of competent elementary teachers, a training program must provide a highly systematic way of identifying the tasks of a teacher and of organizing the program elements to train teachers to perform those tasks.

Following this line of logic, the program designers decided to use a systems approach in determining the specifications for their training program model. They defined teaching as "that set of actions or behaviors intended to influence systematically the learning of a person or persons." A task analysis of teaching as forecast for 1978 was undertaken to identify the components of the "set of actions and behaviors" needed by a competent teacher for that time.

Four major behaviors were identified as basic to all elementary teaching. Stated in their most abstract form they are:

1. The teacher will plan for instruction by formulating objectives in terms of behavior that is observable and measurable.
2. The teacher will select and organize content appropriate to specified objectives in a manner consistent with both the logic of the content itself and the psychological demands of the learner.
3. The teacher will employ appropriate strategies for the attainment of desired behavioral objectives.
4. The teacher will evaluate learning outcomes on the basis of changes in behavior.

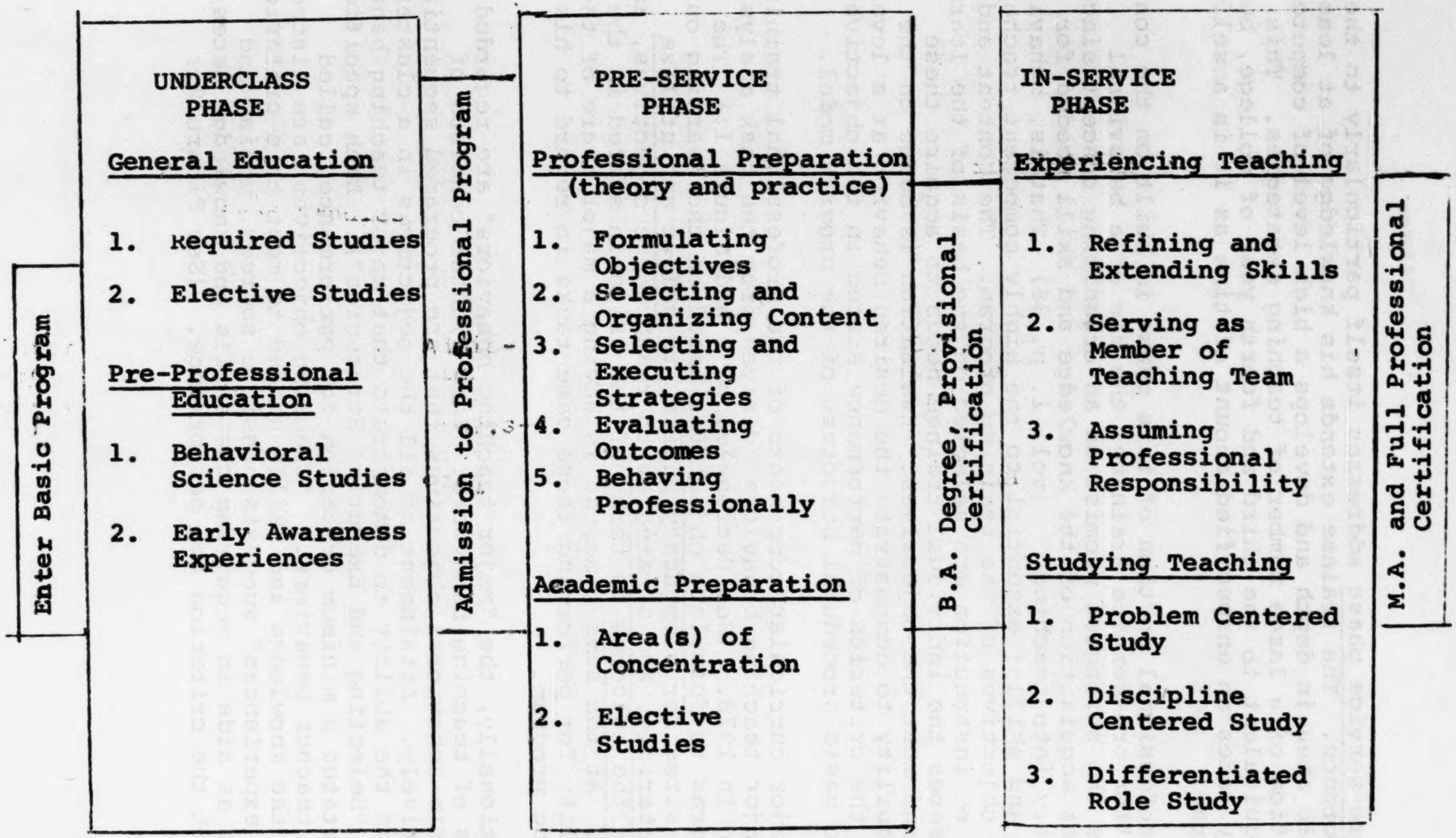
A fifth area of behavior was found outside of the teaching act and was stated as follows:

5. The teacher will demonstrate an acceptance of leadership and professional responsibilities and demonstrate the ability to serve as a professional leader.

COMPONENTS

To meet the needs suggested by the inferences for teacher education, presented in the rationale, the program designers planned a three-phase program model. (See Figure 1.)

The underclass phase, equivalent to the first two years of college, is designed to deal with the first inference--the need for "broadly educated persons." This phase is composed of general education, pre-professional studies in the behavioral sciences, and early-awareness experiences. The latter are experiences with children in various settings throughout the two years for the purpose of introducing the student to the teaching profession and helping him to make career decisions. This phase is presented very generally in the program model.



Enter Basic Program

UNDERCLASS PHASE

General Education

1. Required Studies
2. Elective Studies

Pre-Professional Education

1. Behavioral Science Studies
2. Early Awareness Experiences

Admission to Professional Program

PRE-SERVICE PHASE

Professional Preparation (theory and practice)

1. Formulating Objectives
2. Selecting and Organizing Content
3. Selecting and Executing Strategies
4. Evaluating Outcomes
5. Behaving Professionally

Academic Preparation

1. Area(s) of Concentration
2. Elective Studies

B.A. Degree, Provisional Certification

IN-SERVICE PHASE

Experiencing Teaching

1. Refining and Extending Skills
2. Serving as Member of Teaching Team
3. Assuming Professional Responsibility

Studying Teaching

1. Problem Centered Study
2. Discipline Centered Study
3. Differentiated Role Study

M.A. and Full Professional Certification

Figure 1. A Three Phase Plan for Preparing Elementary Teachers

The pre-service phase addresses itself particularly to the second inference. The trainee extends his knowledge of at least one academic area in depth and develops a high level of competence in utilization of a large number of teaching strategies. This phase is equivalent to the third and fourth year of college, but it actually takes an unspecified amount of time as it is a self-paced program.

The professional portion of this phase is built on the concept that "for pre-service training, the use of a behavioral model holds the strongest promise as an organizing concept since it expedites acquisition of the knowledge and skill needed for initial entry into teaching." (vol. 1. p. 38) That is, behaviors (knowledge and skills) essential to the highly competent teacher become the objectives of the training program. The content and strategies of instruction are selected on the basis of the learning experiences the individual trainee needs to acquire these behaviors and meet the objectives. Evaluation is based on the trainee's ability to demonstrate the desired behavior at a level satisfying the criterion of performance stated in the objective. This is the basic procedural structure of the program model.

The major curricular components of the professional training are the "major teaching behaviors" derived from the task analysis of teaching in 1978. (See Rationale, p. 2 and Figure 1.) The trainee learns to formulate objectives based on the learning outcomes he desires for elementary pupils, to select and utilize content, materials, and strategies to reach those objectives, and to evaluate the outcomes in terms of the criteria stated in the objectives. At the same time, he is having a major share of the responsibility for performing these same tasks in regard to his own training program.

Operationally, the "major teaching behaviors" are regarded as clusters of teaching behaviors. Each cluster consists of many specific behavioral objectives that are programed sequentially and cumulatively. Attainment of all the objectives in a cluster should yield the ability to demonstrate that major teaching behavior (e.g., "Selecting and Executing Strategies"). Each specific objective states a minimum criterion for performance, called "prototype teacher behaviors." "Enabling objectives" are listed, suggesting the knowledge and skills needed to meet this criterion. A list of "experiences" suggests possible sources, media, and experiences as aids in acquiring the skills and knowledge necessary to meet the criterion for performance. (See Figure 2.)

STATING OBJECTIVES IN BEHAVIORAL TERMS

ENABLING OBJECTIVES	PROTOTYPE TEACHER BEHAVIORS	EXPERIENCE (CODE)*
1. Knowledge of categories of behavioral events (e.g., observing, describing, etc.)	1. Given listings of random behavioral events, the trainee will organize them into recognized behavior categories.	Lct, Dsc, IS, Wr, Cmp
2. Knowledge of specific terms which refer to observable overt behavior such as "name," "describe," "state," "analyze," "employ," ...	2. Given a list of behaviorally stated objectives, the trainee will identify the terms which specify the behavior outcome described.	Lct, Dsc, IS, Wr, Cmp
3. Knowledge of the basic elements of a behaviorally stated objective: a. the behavior outcome expected b. the object or content of the objective c. the criteria for successful attainment	3. Given sets of objectives, the trainee will select those which include all elements of behaviorally stated objectives.	Lct, Dsc, IS, Wr, Cmp
4. Ability to write behaviorally stated objectives	4. Given a description of a behavioral task, the trainee will formulate appropriate objectives	Lct, IS, SmO, Wr

*CODE: IS-Independent Study, Dsc-Discussion, Lct-Lecture
Wr-Writing, Cmp-Computer Interaction, SmO-Observing Simulation

Figure 2. Sample page illustrating the presentation of specific objectives

The trainee chooses his objective and what he will do to prepare himself to meet the performance criterion. He "performs"--takes the test or teaches a lesson--and shares in the evaluation of his performance. If he and the evaluator are satisfied with the performance, he proceeds to the next objective. If not, he recycles for further preparation.

To insure that behavioral objectives do not produce a segmented program, progressive synthesis experiences are provided. Not only will the trainee be expected to concurrently practice the application of the principles he is learning, but as he moves through the program, he is expected to synthesize the new skills with those previously acquired until he approximates an integrated set of teaching behaviors. The program demands the provision of a sequence of practice-type experiences that progress from application of principles in analyzing video-tapes, for example, to the reality of full-time classroom teaching responsibilities.

The ability to select appropriate strategies and to utilize them effectively is considered a key to the successful performance of all types of teaching. Thus, the program responds to inference two in the rationale. The theory-practice contiguity throughout the program requires that theory be studied and thentested in practical situations. Strategies are selected and tried with groups of children. The trainee builds a repertoire of skills and strategies based on his knowledge of the behavioral sciences and the structure of the content. The designers believe that the teacher who has many strategies and has skill in decision-making will be adaptable to various educational invironments and thus will be able to meet the challenge of inference five.

The fifth cluster of behaviors, "Becoming Professional," applies in part to inference three in preparing the teacher for anticipated changes in staff roles and relationships. In the pre-service phase, trainees study group dynamics as part of this component. They also learn about professional organizations and legal aspects of teaching. A wide range of experiences extending from the early-awareness activities to full-time classroom teaching placing the trainee in many different roles and levels of responsibility provides practical application for this cluster.

The in-service phase continues the training program into the first two years of actual teaching. (Note inference four.) The emphases of this phase of the program are outlined in Figure 1. The trainees in this phase are hired as beginning teachers in "portal schools," with supervision from the school and the university. They continue their studies in foundations of education, refine their teaching skills, and may choose a specialization. The total program lealds to a Master's degree with full professional certification.

The portal school is a selected public school in which one-third of the staff are master teachers, known as "staff associates." One-third of the staff will be first-year teachers who have just finished their pre-service training. In the second year of operation, one-third of the staff will be teachers in their second year of full-time teaching--the final year of their training program. The schools are selected on the basis of their openness to innovations and opportunities for experimentation and their willingness to serve as training and proving grounds for beginning teachers.

OUTCOMES

The teacher who has completed the three phases of the Florida State program model has a broad background of general knowledge. He has a specialty in some academic content area. He has demonstrated his ability to perform the complex tasks of teaching and has taught full-time for two years in a school situation where he has had supervision and further training. The actual "product" is a highly competent teacher with two years of teaching experience, a Master's degree, and full teaching certification.

INSTRUCTIONAL TECHNIQUES AND PROCESSES

Five types of instructional procedures are used in the Florida State program model. Individual activities include computer interaction, interviews and consultations with staff members, independent study, laboratory and audio-visual activities, and writing. Group activities involve discussion groups, lectures, projects, and presentations. Field observations are made in classrooms or other off-campus sites such as homes of school children and possible field sites for children. Trainees may either observe or participate in simulated situations. Teaching will be done in classrooms, small groups, or tutorially (one student). There are always children available with whom he may try a new skill. These performances are video-taped for analysis and evaluation. If he succeeds in this performance he continues with another task. If not, he recycles, studies more, practices, and is evaluated again.

A normal progression of practice experiences would begin with systematic analysis of taped or actual teaching episodes, followed by response to simulated situations, teaching in small-scale situations, and single task teaching in normal sized groups. Finally, there are reality experiences in which a trainee takes major responsibility for teaching a group of students over a period of time sufficiently long to enable him to meet performance criteria for beginning teaching.

Essential to such a program on a large scale is the computer system, which provides detailed monitoring of trainee performance, progress, and status.

The rationale for this type of instructional procedure comes from an analysis of two theories of the derivation of teaching competence. The first theory begins with the premise that skill in teaching comes from direct knowledge of what produces learning. Supply the teacher with knowledge of children, learning, subject matter, and a thorough background of "foundations and the teacher will automatically be able to draw upon this knowledge to structure children's experiences in such a way as to promote desired learning."

At the other end of the continuum, another theory assumes that teaching is basically a set of skills and routines that can be performed by an educational craftsman. He needs extensive training and perhaps apprenticeship, but he has no need of extensive study on the parent disciplines.

The position taken as the basis for this program model regards each theory as inadequate and recognizes the need to include elements of both theories. Thus, provision is made for continual interaction between theory and practice.

ROLE OF THE TEACHER EDUCATOR

As these instructional techniques vary considerably from the traditional teacher education program, many new roles are required of the staff, making retraining of the faculty a major concern. The program model final report devotes a complete chapter to the description of new staff requirements, organization, and utilization, and plans for retraining of the faculty (vol. 1, chap. 9).

Three main roles for faculty members are envisioned: teacher-counselor, administrator-student personnel worker, and selector-producer of materials. Some teaching will be necessary but more time will probably be spent in individual and small group counseling, assisting students in making program decisions, and making arrangements for meaningful experiences. A major task will be selecting and preparing materials for use by trainees in meeting the specific behavioral objectives. In any given year, a faculty member will serve in two capacities--as a teacher-counselor and either as an administrator-student personnel worker or as a selector-producer of materials. Teams of faculty members will be grouped to make most effective use of unique strengths. It is likely that at least some of the faculty will be on joint appointment between departments.

There will also be positions for persons with less than doctoral status. For example, some titles being used in a trial-run of the program included names such as "evaluators," "schedulers," "counselors," "cameramen," "recorders." A computer staff will also be necessary.

The faculty will need to be made aware of the development of the computer system and its projected usage.

EVALUATION TECHNIQUES

Evaluation in the program model is a continuous process. The criterion for performance is stated in each behavioral objective. When a trainee thinks he has completed the work necessary to meet the "enabling objectives" (Figure 2), he requests of the computer the test or task required to evaluate his knowledge. He then asks to be scheduled to try with a group of children the skill (behavior) called for in the behavioral objective he is attempting to meet. This performance is video-taped and the trainee evaluates it. Before he can proceed to a new objective, he and a staff member must agree that the performance satisfies the stated criteria.

Entrance to the pre-service phase depends on the results of a thorough screening process that will include both objective and subjective measures of abilities, commitment, and physical and mental health. This screening is based on the rationale that only persons of high ability will be able to successfully perform the tasks of an elementary teacher. Florida State's studies reveal that only about thirty percent of the persons trained for teaching remain in the profession. The program designers have attempted to presss trainees for a commitment to the profession. Measures of commitment are considered an important feature of the screening program. They will be used for studying characteristics attitudes of teachers. The data will be fed into the information-retrieval system for long-range study that hopefully will yield information useful in predicting teacher competence and persistence in the profession.

It is assumed that trainees will have acquired certain skills and knoweldge prior to the pre-service phase of the program. Therefore, each trainee will be given a diagnosis of skills upon entry so that his program may be more efficiently tailored to his needs.

It will be necessary to make decisions about allowing a trainee to remain in the program. The program model is committed to the proposition that all such screening after admission must be a function of the trainee's demonstrated ability to meet stated performance criteria. Frequent computer printouts on each trainee, which refer to his performance status on behaviors covered to that point, will provide a profile to serve as information for the student as to his own progress and a guide to the counseling professor.

All information on each trainee--personal background data, results of screening tests, individual programs and evaluation data including the in-service phase--will be stored in the information-retrieval bank. These data will be used for evaluation and updating of the program itself. Program designers believe this information also should provide valuable data for research in teaching and teacher education.

RESPONSIVENESS TO SOCIETAL AND PROFESSIONAL NEEDS

To understand the program's relationship to society and the profession, it is helpful to refer to its predictions for education in 1978. They are:

1. Society will make increased demands upon schools and colleges to fashion programs to meet the needs of all of its people.
2. The fact that education will be increasingly society-oriented will aggravate the tension between educators and the general public.
3. Education will meet society's demands through increasing attention to the individual.
4. Each major level of organized education will see itself as capable of managing its own program planning, and teachers at each level will seek autonomy over a greater range of matters important to them than ever before.
5. Curriculum developers in elementary and secondary will try to overcome extreme separate-subject-centeredness and move toward a more interdisciplinary design.
6. Schools, especially inner-city schools, will have to relate more directly to the total environment.
7. Emphasis will be placed on relevance in learning.

The program interprets these predictions in terms of the teacher by concluding that only a broadly educated, highly competent person will be able to function as a teacher in this society. It also supports the philosophy that teachers need to be prepared to adapt to any environment rather than to be trained for only specific situations.

Although the program is designed to prepare skilled generalists, there are three types of specialization included which help to prepare the teacher for the conditions predicted above. First, after many experiences with children at different age levels, the trainee must elect either early or later childhood as an emphasis for his training. Thus, he studies in depth the set of child characteristics and needs typical of a narrower age range and can be better prepared to understand and deal with the individual child. (Prediction 3)

Second, the trainee must select an academic area in which to study in depth beyond the general education level. The general education provides the broad background for teaching an interdisciplinary curriculum (Prediction 5), but the designers also foresee more teaming of elementary faculty members in this type of curriculum for which a teacher will also need competence in some special field of knowledge.

Third, areas such as role differentiation, inner-city teaching, and exceptional children are possible specializations that may be considered during the summer experiences of the in-service phase. There is also a suggestion that a trainee who meets all the performance criteria for beginning teaching ahead of anticipated norms might elect a "role specialization" or another special academic area prior to the in-service phase, if he so desires. These specializations are considered only after the trainee has become a competent generalist, who is able to form objectives and design learning experiences based on the needs of the learner, taking the child where he is and making learning relevant. (Predictions 6 and 7)

The program model makes several commitments to meet needs of the profession. It selects capable people and strives to obtain their commitment to the profession. If successful, this would decrease the present dropout rate and give more continuity to public school programs. Beginning teachers have demonstrated their teaching competence rather than merely acquired a grade point average. Attention has been given to preparing the teacher to assume professional leadership by designing a component specifically directed to this need and by requiring much self-direction in his own training program.

The in-service phase makes direct contributions to the public schools. The portal schools are feeders to the other schools in the counties--feeding ideas, new teachers, and in-service education opportunities for the permanent staff. They also become a bridge over the gap between the public schools and the university.

Finally, the feedback from the computerized program should provide much new information concerning teacher behavior, predictors of teaching success, and many other insights useful to the profession.

It is not clear how the program model prepares the teacher to cope with the "tension between educators and the general public"(Prediction 2). The rationale also mentions the increased use of paraprofessionals in the schools, but the program makes no provision for training such personnel--only for preparing teachers to work with them. Counselors are encouraged to guide trainees, who are unsuccessful in meeting the minimum criteria for teaching, into other education-related occupations.

UNIQUE CONTRIBUTIONS

The following list summarizes the features of this program that are not usually found in traditional teacher education:

1. During the underclass phase, trainees will participate in early awareness-involvement program designed to acquaint them with the roles, demands, and rewards of teaching.
2. A series of experiences designed to enable trainees to meet stated performance criteria will be developed to replace formal courses.
3. Trainees will be permitted to move from one experience to the next at an individual progress rate when they have demonstrated the ability to satisfactorily meet performance criteria.
4. Trainees will have an opportunity to make immediate application of theory to practice through extensive use of small to large scale teaching activities.
5. Trainees will be taught a repertoire of technical skills of teaching and will be helped to integrate these into a total teaching performance.
6. Preparation will be extended into initial teaching years through an in-service phase, implemented jointly by the preparing institution and selected school systems, as an integral part of the total model.
7. Faculty development and utilization are provided for through retraining consistent with the demands of new roles in the model.

8. A direct effort is made to describe the selection of trainees for preparation by a system reflective of the performance criteria deemed necessary for teaching.
9. The desirability and necessity of specialization in elementary school teaching is accepted and planned for in the model.

MODEL REVISION

Being a regenerative model, this program is continually evaluated and revised on the basis of constant feedback from trainee performance, diagnosis of trainee needs, and the in-service phase where the beginning teacher is still maintaining a relationship to the training institution. The individualisation of the training program makes it more flexible than a traditional system of courses and more adaptable to current needs. It is a matter of providing relevant experiences where needed rather than necessitating a major curriculum revision.

It is less clear how the program is to keep current with the needs of society except as they are reflected in the needs of the trainees and the children with whom they work.

RELATIONSHIP TO GENERAL EDUCATION

The underclass phase, normally the first two years of college, devotes approximately two-thirds of the time to developing the skills and understandings known as general education. In this model, general education refers to that portion of university study that students share regardless of future occupational choice. It is designed to provide them with a comprehensive and vivid look at their world through study of the natural sciences, the social sciences, history, and the humanities. The intent is to expose them to the far-ranging accomplishments of the human mind and spirit, and in a way to encourage and free each of them to gain satisfaction from life while contributing to a better life for all. General education is of couble significance for elementary school teachers for it is acquired once for themselves as maturing young adults, and again as raw material for teaching. A major portion of the skills and understandings essential for entry into the pre-service phase of the model will be completed in general education studies. Opportunities to extend these in both depth and breadth are made available in the pre-service phase.

General education instruction is allocated to the appropriate divsions of the university other than the school of education. This part of the program is not developed in detail. During these two years, however, the trainee will be engaged in pre-professional studies in the behavioral sciences and in an early awareness-involvement program designed to inform the prospective teacher candidates about the role, demands, and rewards of teaching. This also provides a basis for making an early commitment to the preparation program and to service in the profession. Beginning in the freshman year at the university, the trainee has opportunities for clinical experiences in the school and community and for close association with a continuing seminar group of peers under the direction of a counseling professor.

FEASIBILITY

Florida State University is the alrgest producer of teachers in the southeast, with an enrollment of approximately one thousand teacher candidates in the junior and senior years. While it is not as large as The Ohio State University, many of the same problemsn would need to be considered in either institution in the emplementation of this program model. The Florida personnel seem to feel that none of the hurdles is impossible and in light of the advantages of the program they consider the effort to be worthwhile. This program is a design that would need to be adapted to each particular situation. The following is a summary of possible problems to be overcome in implementing this program model.

1. The model requires an adequate computer system. (This is not a serious problem in most large universities.)
2. The faculty must be retrained. Differentiation of staff must be worked out. Until feasibility studies are complete it is difficult to determine the increase in personnel that would be necessary.
3. Each institution would need to work out its own objectives in keeping with the needs of its public and its institutional philosophy.
4. The theory-practice contiguity feature demands a constantly ready source of children available to the trainee while still providing a meaningful education for the children, and a well-equipped materials and instructional materials center extensive enough to serve the trainee population.

5. Essential to the extended training in the in-service phase is a cooperative relationship with the public school systems enabling the institution of portal schools or devising some other effective system of follow-up and continuing education.

6. A reorganization of the grading system is required.

7. As many students in the state universities transfer from junior colleges, cooperative programs facilitating the pre-professional component of early awareness-involvement would have to be worked out.

8. The program offers many possibilities to large institutions with advanced degree programs in teacher education. Many positions in the staff would lend themselves to training situations for prospective teacher educators. This would also involve a revamping of the training programs of such persons.

RELATIONSHIP TO RECOMMENDED STANDARDS IN TEACHER EDUCATION (NCATE)

An accrediting committee commissioned by NCATE to evaluate an institution of teacher education that is implementing the Florida State program model should find the curricula for basic programs adequate to meet the recommended standards. Only the standards applicable to a program in the "blueprint stage" are considered below.

1.1 Design of Curricula

Standard: Teacher education curricula are based on objectives reflecting the institution's conception of the teacher's role, and are organized to include general studies, content for the teaching specialty, humanistic and behavioral studies, teaching and learning theory with laboratory and clinical experience, and practicum.

The Florida State program model is based on the predicted role of the teacher and includes all of the features mentioned in the standard. One of the major features of the program is continuous and progressively more complex responsibilities in practical situations to insure theory-practice contiguity.

1.2 The General Studies Component

Standard: There is a planned general studies component requiring that at least one-third of each curriculum for prospective teachers consist of studies in the symbolics of information, natural and behavioral sciences, and humanities.

Two-thirds of the first two years are to be spent in study of the natural sciences, social sciences, history, and humanities. The other one-third of the time is devoted to the behavioral sciences and early awareness-involvement activities. The general education curriculum, while not spelled out in detail, is expected to be allocated to appropriate divisions of the university. No provision is indicated whereby the college of education may assist in the selection of content for the general studies curriculum.

1.3 The Professional Studies Component

1.3.1 Content for the Teaching Specialty

> Standard: The professional studies component of each curriculum for prospective teachers includes the study of the content to be taught to pupils; and the supplementary knowledge, from the subject matter of the teaching specialty and from allied fields, that is needed by the teacher for perspective and flexibility in teaching.

Most of the subject matter to be taught in elementary school is studied in the general studies component of the underclass phase. Each student, however, is to select an academic area for further in-depth study. The content for these specialties is not outlined. The Appendix of the final report suggests a breakdown into behavioral objectives for the teaching of various content areas such as language arts, music education, and science education.

1.3.2 Teaching and Learning Theory with Laboratory and Clinical Experience

> Standard: The professional studies component of each curriculum includes the systematic study of teaching and learning theory with appropriate laboratory and clinical experience.

The objective of the third major component of the preservice phase is the ability to use appropriate strategies for the attainment of behavioral objectives. The enabling objectives of this component include knowledge of learning and teaching theories, These are then applied in teaching situations to meet the performance criteria. Volume II, Appendix F gives detailed information and references related to learning, behavior modification, reinforcement, etc.

1.3.4 Practicum

Standard: The professional studies component of each curriculum for prospective teachers includes direct substantial participation in teaching over an extended period of time under the supervqsion of qualified personnel from the institution and the cooperating school.

Practical experiences in schools and with children in the community begins in the freshman year and continuos throughout the training program, culminating in two years of full responsibility under supervision of staff associates in the portal schools and counseling professors from the university.

1.4 Use of Guidelines Developed by National Learned Societies and Professional Associations.

Standard: In planning and developing curricula for teacher education, the institution gives due consideration to guidelines for teacher preparation developed by national learned societies and professional associations.

The bibliographies in the program model final reports indicate that literature from the "learned societies and professional associations" was used in the preparation of the program model. The program model is a design, however, and the curriculum content would have to be determined by the institution implementing the design. An evaluating committee would have to analyze the curriculum in each institution to determine if association guidelines for the various content areas were being used. The design follows quite closely the standards of the NCATE for the basic program of teacher education.

1.5 Control of Basic Programs

Standard: The design, approval, and continuous evaluation and development of teacher education programs are the primary responsibility of an officially designated unit; the majority of the membership of this unit is composed of faculty and/or staff members who are significantly involved in teacher education.

The program model was designed by members of the faculty of the College of Education of Florida State University with the help of a number of consultants who are experienced in the field of teacher education. Administratively, it is described as an "interdepartmental model program unit headed by a director."

There is no statement designating the percentage of full-time faculty, but interdepartmental appointments are anticipated with such faculty having full voting rights. The director is to be involved in any university decisions that affect the program and is responsible for implementation of the program and making faculty assignments. The faculty are actively involved in program decisions based on continued feedback from trainee performance.

2.1 Competence and Utilization of Faculty

> Standard: An institution engaged in preparing teachers has full-time faculty members in teacher education, each with post-master's degree preparation and/or demonstrated scholarly competence, and each with appropriate specializations. Such specializations make possible competent instruction in the humanistic and behavioral studies, in teaching and learning theory, and in the methods of teaching in each of the specialties for which the institution prepares teachers. There are appropriate specializations to ensure competent supervision of laboratory, clinical, and practicum experiences.

The roles of the faculty in this program are very different from those of the traditional teacher education programs. Some roles do not require advanced degrees, some are more technical in nature, and in general the duties of a faculty member are different from those with which he has been familiar. A specially planned retraining program is outlined for both faculty members and for the staff associates who work with students in the portal schools. Specialists will be brought in from other departments and will be given joint appointments to assure their commitment to teacher education as well as to their own department. These specialists will also be teamed with regular faculty to give the greatest possible resources to the trainee.

3.1 Admission to Basic Programs

> Standard: The institution applies specific criteria for admission to teacher education programs; these criteria require the use of both objective and subjective data.

Admission of trainees to the pre-service phase of the program is based on measures of abilities, commitment, and physical and mental health. Measures of intellectual and academic ability include standardized tests of general aptitude, of ability to organize and express ideas in written form, and of general achievement in specific subject fields. Subjective data will include grade point averages, special honors, and the extent and kind of participation the student has had in campus and community life.

Measures of commitment will include standardized measures of attitude toward people (especially children), attitudes and values related to self, and attitudes and preferences toward occupations. At first this will not be considered prime data for admission. Scores will be fed into the computer as part of a data bank for research purposes. If later the data show significant relationships between such measures and initial learning of teaching behaviors, later performance as a full-time teacher, or persistence in the teaching profession, they may carry more weight in initial admission. Subjective data will be obtained from the reports of counseling professors regarding reactions of trainees to their early awareness-involvement experiences.

Physical and mental health decisions will have to depend on the recommendation of medical and psychiatric services, the criteria being that the trainee's state of health does not interfere with his ability to carry out the necessary teaching tasks or does not endanger the children.

Specific instruments of measurement and the criteria for admission are listed in the Appendix of the Final Report.

3.2 Retention of Students in Basic Programs

Standard: The institution applies specific criteria for the retention of candidates in basic programs who possess academic competencies and personal characteristics appropriate to the requirements of teaching.

The program model is committed to the proposition that all screening after admission must be a function of the trainee's demonstrated ability to meet stated performance criteria. If the trainee fails to meet the criteria, after preparing for a particular objective, he recycles, studies, practices, performs, and is evaluated again. Theoretically, a trainee could try the task as many times as he wishes in order to meet the criteria. Practically, it may become obvious to the faculty that a trainee does not have certain essential qualifications for teaching. He will be redirected as early as possible to something more suitable for him--hopefully, another role in education.

3.3 Counseling and Advising for Students in Basic Programs

Standard: The institution has a well-defined plan for counseling and advising students in teacher education.

Counseling is a major role for each member of the faculty. The program is individualized training and depends on this trainee-faculty relationship for its success. The faculty will be retrained for this role if necessary.

4.2 Materials and Instructional Media Center

Standard: A materials and instructional media center for teacher education is maintained either as a part of the library, or as one or more separate units, and is adequate to support the teacher education programs.

Only the computer system specifications are actually spelled out in the program model. In the three-week trial-run of the program at FSU in the Fall of 1969, the main portion of the trainee's time was spent in a materials and media center. It contained library materials, audio-visual equipment and materials, and teletype equipment for access to the computer. Another building house the children and rooms for microteaching, videotaping, etc. Such a center is an absolute necessity for this program.

5.1 Evaluation of Graduates

Standard: The institution conducts a well-defined plan for evaluating the teachers it prepares.

The six-year program permits the university to follow the trainee through two full years of teaching in a public school. Data from these two years are available in the information-retrieval bank for evaluation of the teacher and of the program itself.

5.2 Use of Evaluation Results to Improve Basic Programs

Standard: The institution uses the evaluation results in the study, development, and improvement of its teacher education programs.

Evaluation of graduates and constant program monitoring with the assistance of the computer are used for program modification. Elements can be added or eliminated as evaluation indicates the need.

5.3 Long-Range Planning

Standard: The institution has plans for the long-range development of teacher education; these plans are part of a design for total institutional development.

This program is a long-range plan and expects the results of the computer management control to add considerably to the information and research needed to improve teaching and teacher education. The program does not significantly plan for total institutional development, although it does involve much of the institution by using an interdisciplinary faculty arrangement.

THE FLORIDA STATE UNIVERSITY PROGRAM MODEL

Analysis by Lorren L. Stull

RATIONALE

The Florida State University Model is the product of an interdisciplinary team's effort to create a program of teacher education that would reflect the society of 1978 and satisfy that society's demands upon its schools. The rationale undergirding the program model is based upon predictions concerning society and education a decade hence as described in position papers written by the interdisciplinary team.

Society is seen as becoming increasingly urban centered, increasingly complex politically for citizens and leaders, increasingly alienating toward young people, and increasingly challenged in terms of traditional wisdom. Science and technology will continue to be dominant forces in our lives, while the international character of life will influence social, political, and economic affairs in a striking way. Multiple mass media will be pervasive, and a massive effort to alleviate social ills will be made by the federal government.

Society will make increased demands upon schools and colleges to meet the needs of all of its people, particularly needs related to occupational endeavor and responsible citizenship. Schools will relieve the tension between educators and the general public (aggravated by an increasingly society-oriented school system) by increasing the attention given to the individual, by placing relevance on learning, and by relating more directly to the total environment, especially in the inner-city. Each major level of organized education will see itself as capable of managing its own program and will seek increased autonomy, while elementary and secondary school curriculum developers will try to overcome extreme separate-subject-centeredness and move toward a more interdisciplinary design.

These societal and educational predictions for 1978 imply that programs of teacher education must prepare persons of high ability who will be able to make the increasingly difficult decisions required of teachers, who will be flexible in role adaptation so that they may adjust to various and changing educational environments, and who will be able to work effectively with other professional and paraprofessional personnel. The demands of elementary teaching will be met only by broadly educated persons with depth of knowledge in at least one academic content area and with a high level of competency in utilizing a large number of teaching strategies. Refinement of teaching behaviors and adequate attention to each teacher's special problems will be possible only if the training program is placed on a pre-service/in-service continuum.

Model developers recognize the design inadequacies of most current programs: passive treatment of the student--he learns about the educative process but is not helped to learn how to teach; little flexibility--the same sequence of courses is required of all students; no systematic feedback--students, teacher educators, and institutions do not receive the information needed for modification of progress, instruction, or program; and an inadequate selection process--information predictive of teaching behavior is gathered only during the student teaching experience, at the end of the program when it is of little use.

Based upon the predictions, implications, and design inadequacies summarized above and coupled with a synthesis of knowledge (gleaned from relevant disciplines, the experience of actually teaching, and a reading of the research literature on the analysis of teaching), a modified systems approach was used to develop the specifications for this model. The decision to use this approach required that a detailed task analysis of teaching be undertaken. It was subsequently determined that the teacher must (1) plan for instruction by formulating behavioral objectives, (2) select and organize content, (3) employ appropriate strategies for attainment of the objectives, and (4) evaluate instructional outcomes. In addition, the teacher must (5) be competent and willing to accept professional responsibilities and leadership. These five teaching behaviors are the basic elements for the systematic development of the program model.

COMPONENTS

There are three phases in the program model: the underclass phase, the pre-service phase, and the in-service phase. In addition, there are three essential facilitating components: a comprehensive admissions and screening program, a computerized management control system, and a staff development program.

The underclass phase (the first two years of the program) consists of two components: general education and pre-professional studies. General, or liberal, education studies (natural sciences, social sciences, history, and humanities) occupy approximately two-thirds of the student's time during the underclass phase and provide a major portion of the skills and understandings essential for his entry into the pre-service phase. The general education component contains both required and elective experiences. The pre-professional studies component includes work in the behavioral sciences (psychology, sociology, cultural anthropology, physiology, and human development) and early awareness-involvement experiences. Study of the behavioral sciences is intended to increase the student's understanding of the meaning of organized education, the modifiability of human behavior, and the nature of teaching. Early awareness-involvement experiences are designed to inform the student about the role, demands, and rewards of teaching, and to provide him with a basis for making a commitment to the preparation program and to service in the profession.

Admission to the pre-service phase precipitates concentration of the trainee's time and attention on the professional education component of the program. Major features of the pre-service phase are:

1. Self-paced experiences that allow the trainee to move through the program at his own rate. (This implies sequenced experiences that prepare the trainee to meet performance expectancies and that replace the usual course work in the professional training component--approximately two-thirds of the trainee's time.)

2. Performance evaluation that tests the trainee's ability to meet specified criteria. (This includes demonstration of simple skills or techniques, synthesis of related skills, and carrying out a complex set of teaching tasks.)

3. Theory-practice contiguity accomplished through use of observation, simulation, microteaching. (This implies experiences used to establish the need for learning a principle or technique, followed by the opportunity to practice and demonstrate direct application of the principle or technique.)

4. Progressive synthesis experiences which, thought used at any appropriate point in the trainee's program, would normally follow this order:

   a. Systematic analysis of taped or actual teaching episodes

   b. Response to simulated instructional situations

   c. Teaching in small scale situations (tutoring, microteaching)

   d. Single task teaching to normal size groups (unit of work to a class)

   e. Reality experiences (major responsibility for teaching a group of pupils sufficiently long to meet performance criteria for beginning teaching)

5. Computerized management control system to monitor trainee performance, progress, and status. (This also permits continuous evaluation and revision of all program elements, permits flexible scheduling, and provides information needed for staff, material, and resource planning and assignment.)

During the pre-service phase most trainees will devote approximately one-third of their study time to course work in basic and elective studies, general education, emphasizing content that has direct relevance to the curriculum of the elementary school.

The in-service phase begins with the granting of the bachelor's degree. It is designed to insure the continuation of learning after the teaching experience has begun, avoid the erosion of the beginning teacher's idealism caused by day-to-day confrontations with reality, and involve the new teachers in testing of new ideas, curriculum materials, and tools. There are two major parts of this phase of the program model: (1) field work carried out during two regular school years in portal schools (the gateway for entry into teaching), and (2) on-campus work during three summers.

The field work program is designed:

1. to expand concepts and improve skills partially developed in the pre-service phase;

2. to develop new concepts and skills related to the total act of teaching (instructional design, teaching skills, and evaluation); and

3. to extend teacher behaviors to include those necessary for the assumption of full professional responsibility (treated indirectly in the pre-service phase but here to be observed and experienced directly).

The three summer sessions will be used:

1. to provide a more rational basis for engaging in specified teaching behaviors;
2. to supplement real experiences undergone while teaching in the schools; and
3. to provide opportunities to pursue various forms of specialization in elementary school education.

Satisfactory completion of the two-year field work and three summer sessions will culminate in the receipt of the master's degree and full professional teacher certification.

The model provides admission and screening policies designed to select those candidates who show evidence of capability to meet performance criteria as stated and who demonstrate a commitment to complete the program and remain in teaching. Initial admission will be based upon measures of abilities, measures of commitment, and measures of physical and mental health. A battery of tests recommended for use in the admissions program, along with a rationale for each test selected, is included in the appendixes. The model developers recognize that many difficulties will be encountered in collecting and interpreting this information, especially that concerning commitment; consequently, (1) the scores will be fed into the computer as a part of a data bank for research purposes, and (2) a more subjective source of data, the counseling professor's reports based on the early awareness-involvement work done under his direction, will merit serious consideration as prime admission data. After the trainee is admitted to the program, a diagnosis of entry skills will make possible: (1) the best placement of the trainee in the training sequence, (2) the provision of work designed to selectively upgrade his entry skills, and (3) the establishment of initial time estimates for pacing the trainee's program. Sample profiles of entry skills for three areas (health education, art education, and language arts) are included in the appendixes. Screening from the program will be done on the basis of inability to meet stated performance criteria. When possible, the student who cannot be admitted to or retained in the program will be redirected to a role in education that could use his other abilities and in which he would likely be effective.

The computerized management control system will serve three major purposes:

1. Monitoring each trainee's progress by periodically providing to the trainee and his counseling professor data relevant to the trainee's progress and successful completion of the program

2. Providing project managers with summary data on the progress of all trainees on a regular basis

3. Providing data for researchers interested in a variety of variables having to do with success in training and success in actual teaching

It is proposed that two interrelated systems be developed. The first will serve the trainee, the professor, and the administrator. It will operate in real-time via remote terminal access for the first two users and in batch-mode for the administrator. The second, operating only in batch-mode, will be entirely oriented toward the needs of the curriculum developer and researcher.

A staff development program is considered as an important component of the model because many of the required roles are new to professional teacher education. The staff development program requires that each faculty member:

1. Participate in a series of workshop sessions to get an overview of the teaching behaviors specified for development in the model

2. Study in depth one of the clusters of teaching behavior

3. Participate in work groups to develop an understanding of and skill in the use of the training tools and techniques needed to implement the program model, including microteaching, simulation, observation techniques, programed instruction, use of multi-media, and individually prescribed instruction

4. Make an in-depth study of one of these tools or techniques

Similar experiences are to be provided for staff associates, public school teachers who hold joint appointments with the university and cooperating public schools (portal schools). In addition to the direct approach to faculty development, a university faculty can learn much by being involved in the process of planning and improving a program for teacher trainees. Program model developers believe that the indirect way in which this learning is accomplished should not be permitted to obscure the importance of the results.

That philosophical consistency has been preserved by the developers of the program model is evidenced by the following statement:

> "...the statement of behavioral objectives in terms as precise and behavioral as possible was a process utilized both in model program development, and in describing the basic tasks of teaching.
>
> "It must be acknowledged that a strong case can be made for the inclusion of other types of objectives, such as those which call for no more than exposure of a learner to natural elements within the environment, without specification of explicit expected outcome. Such ideas will ultimately receive attention in training, particularly during in-service years. However, for pre-service training, the use of a behavioral model holds the strongest promise as an organizing concept since it expedites acquisition of the knowledge and skill needed for initial entry into teaching." (Volume I, p. 38)

The rationale for each component is drawn directly from the basic rationale of the program model. However, it is at times difficult to locate the component rationale because of the format used in the final report--"from the general to the more specific to the still more specific." Many of the "specifics" appear in the appendixes, the content of the second volume of the final report. Unfortunately, only the first volume of the report receives wide distribution and the reader of this volume will probably have many questions that can be answered only by reading the second volume.

OUTCOMES

The decision to use a modified systems approach to develop the specifications for the program model required that a detailed task analysis of teaching be undertaken. It was determined that the teacher must plan for instruction by formulating behavioral objectives, select and organize content, employ appropriate strategies for attainment of the objectives, and evaluate instructional outcomes. In addition, the teacher must be competent and willing to accept professional responsibilities and leadership. These five teaching behaviors were the basic elements for the systematic development of the program model and are its anticipated outcomes.

The program model presents a detailed analysis of each major teacher behavior following a format that includes an introductory statement, an abstract previewing the categories of enabling objectives to be detailed, the detailed sequential listing of enabling objectives, juxtaposed prototypical behavioral outcomes, and codes representing suggested types of training experiences. For example, following the introductory statement for Behavior One: Formulating Objectives, the abstract briefly describes three categories of enabling objectives: (1) stating objectives in behavioral terms, (2) understanding theoretical considerations in formulating objectives, and (3) translating broad goals and educational aims into instructional objectives. The enabling objectives of each category are then listed sequentially. Beside each enabling objective are the prototypical behavior to be demonstrated by the trainee and suggested types of experiences to be employed in developing the desired behavior. For example, the first enabling objective in the category named first above is: "Knowledge of categories of behavioral events (e.g., observing, describing, knowing, etc.)." The prototypical behavior for the objective is: "Given listings of random behavioral events, the trainee will organize them into recognized behavior categories." Suggested types of experiences are: lecture, discussion, independent study, writing, and computer interaction.

Similar analyses of content areas (music, science, mathematics, industrial arts, language arts, social studies, art, and physical education) and profiles for the early awareness-involvement program, learning strategies, and evaluation are included in the appendixes.

The developers recognize that, while the program model is described in rather specific terms, the specifics are inexact in many parts. Failure to detail every operation was caused partially by lack of time but, more importantly, because research evidence on which to base a program model was clearly incomplete at the time.

INSTRUCTIONAL TECHNIQUES AND PROCESSES

In the underclass phase of the program model, early awareness-involvement experiences include clinical experiences in the school, seminar experiences with a group of peers, service in school and community agencies, and individual counseling and planning with program faculty. These experiences are designed to help the student to become aware of the nature of elementary school teaching, to learn about the demands of this preparation program, and to determine the strength and direction of his career motivation. In addition, program staff will obtain information about the student that will be useful in the selection process.

During the pre-service phase, the professional preparation component is structured around the analysis of major teaching behaviors (selecting and writing objectives, selecting and organizing content, selecting and executing instructional strategies, evaluating outcomes of instruction, and acting competently and responsibly as a professional leader), the acquisition of which should equip the trainee to begin teaching. Training experiences suggested for this phase of the program are grouped into five categories: individual activities, group activities, field observation, simulation, and teaching. The experiences include computer assisted instruction, independent study, projects, observation, microteaching, and small group and tutorial instruction.

Trainees will spend two regular school years in portal schools and three summers on campus during the in-service phase of the program. Portal schools will have the following common characteristics: principals and other status leaders who are favorably inclined toward innovation; the use of some of the "new" curricula; organizational arrangements that include paraprofessionals and teacher aides, some differentiation of roles among teachers, and a modular schedule; and considerable use of new teaching media. Placement in portal schools is designed to improve teaching competence by focusing on practical problems in the teaching environment. Portal schools will serve in the total program by:

1. insuring trainees an easy transition from the sheltered university pre-phase to the fully responsible teaching position in the schools in the in-service phase

2. making it possible for the in-service phase to operate in school situations that are in total harmony with program goals

3. providing feedback to determine further needed changes in the pre-service and in-service phases of the program

It is expected that, when fully operational, one-third of the faculty of each portal school will be experienced teachers; the remainder of the faculty will be trainees.

The summer sessions will use a seminar format, will be somewhat experience related, and will be used to increase the rationality of teaching behavior, develop professional responsibility, and pursue various forms of specialization.

Each summer each trainee will study at least one of the following areas: history of education, philosophy of education, educational psychology, educational sociology, statistics, and measurement and evaluation. He will participate in seminars dealing with topics such as the status of the teaching profession, changing roles of various educational personnel, professional organizations and their functions, state departments of education, and the teaching profession's relationship to labor, business, and the general public. Additional seminars will be designed to clarify the demands of selected specializations and to offer or direct students to the further training required by them.

ROLE OF THE TEACHER EDUCATOR

Faculty members will have three major types of assignments:

1. Administration--student personnel
2. Teaching--counseling
3. Selecting and producing materials

During the course of an academic year, it is expected that a faculty member will serve as a teacher-counselor and as either an administrator-student personnel worker or a selector-producer of materials.

The administrator-student personnel worker will be engaged in scheduling training activities, allocating and scheduling staff time, admitting and screening trainees, and assigning rooms and equipment.

The selector-producer of materials will have especially heavy responsibilities during the developmental stages of the program. He will be involved in the selection and development of: tests for the admission program; tools, instruments, and materials for use in teaching the trainees; simulation materials to teach skills and concepts; and instruments to determine the effects on pupils of the teaching behaviors being developed.

The third type of assignment, teaching-counseling, is perhaps the most important of the three. Practically all faculty will be teacher-counselors at some point in the program. As teachers, they will be responsible for planning and monitoring experiences of trainees while they learn the major teaching behaviors. Because it is anticipated that at any one time some trainees will be working on each of these teaching behaviors, it should be possible for faculty members to teach in the areas where their strengths are greatest. It is expected that teaching professors will operate on interdisciplinary teams, particularly in the synthesis portion of the pre-service phase. As a counselor, the teaching-counseling professor must plan with the trainee a specific program for movement through the prescribed behaviors and must make periodic decisions regarding next steps along the way. Retrieval of data stored in the computer will facilitate this process.

It is recognized that even after the in-depth seminars of the faculty development program, some of the faculty members will be more highly specialized than others. The specialists will be expected to function primarily in that role; the generalists will serve more in a coordinating role. However, in an attempt to develop a more global point of view on the part of greater numbers of faculty members, an effort will be made to create situations requiring each faculty member to function as a specialist at times and as a generalist at others.

The team concept will be used for much of the operation by grouping faculty members from various background and with unique strengths to take responsibility for certain areas of the training program. It is expected that some of the faculty will be on joint appointment between some departments of a college of arts and sciences and the teacher education program or between some department within a college of education and the program.

Experienced teachers in the portal schools will be appointed as staff associates and assigned to assist the university staff with first- and second-year in-service trainees. These trainees will be less than full-time teachers, i.e., some of their time will be left free to engage in activities related to program objectives. In cooperation with counseling professors, whose assignments will be devided between on-campus work with pre-service trainees and field work with in-service trainees, the staff associates will plan and carry out activities for the in-service trainees under their direction, especially with reference to released time on the job. During the summer sessions, staff associates and counseling professors will staff the seminars of the in-service phase of the program.

The program model also describes the role of the program director, the director of admissions and screening, and faculty involvement in admission procedures.

EVALUATION TECHNIQUES

Success in the pre-service phase depends upon the trainee's ability to meet stated performance criteria in the five teaching behaviors: state objectives, select and organize content, utilize appropriate strategies, utilize evaluation skills and techniques, and demonstrate a willingness to provide leadership and assume professional responsibility. For certain knowledge and skill tasks, evaluation may be based upon standard paper-and-pencil tests, but major evaluation of teacher behaviors will require the trainee to demonstrate first a simple skill or technique, then to synthesize a group of related skills, and finally to carry out a complex set of teaching tasks.

Decisions regarding the trainee's levels of performance are necessarily subjective on the part of the program staff. If it is determined that the specified criteria have been met, the trainee proceeds to the next training sequence. Otherwise, another experience in the same area will be prescribed.

Frequent computer printouts on each trainee will:

1. provide a reading for the trainee on the progress he is making, including his performance status on behaviors studied to that point

2. help allay tensions emanating from the uncertainty and vagueness inherent in traditional marking systems

3. assist the counseling professor as he helps the trainee plan the next steps in his program, including the recommendation that the trainee not continue the program

The program model is consistently behavioral. Therefore, it is assumed that in the future specific measurable behaviors will be identified as criteria for evaluation during the in-service phase. To date, the program model refers only to "successful completion" of the work outlined for the final phase.

RESPONSIVENESS TO SOCIETAL AND PROFESSIONAL NEEDS

All trainees will be helped to develop a common general background relative to content areas and understanding of elementary school age pupils. However, each trainee is expected to make a decision about three areas of specialization: age level, academic subject area, and differentiation of teaching function.

Each trainee will be asked to select an age group preference for teaching. Although there will not be rigid artificial divisions of the age groups, two broadly defined age groups will be used: pupils of ages three to eight or nine (early childhood) and pupils of ages eight or nine to about thirteen (later childhood). The choice made will be reflected in the nature of the training experiences provided for the candidate.

At least one subject-matter area should be selected for special study by each trainee. It is expected that this area will be an extension of study begun in the underclass phase. There will be opportunities to pursue the study during the pre-service phase (especially if the trainee meets professional component performance criteria ahead of anticipated norms) and during the in-service phase.

During summer sessions of the in-service phase, some trainees will wish to pursue their specialization further in terms of age level or subject-matter area; others may wish to specialize in work with a particular type of child (slow learner, gifted, disadvantaged) or on some differentiated teaching function (director of a building unit learning center, diagnostician in schools committed to individually prescribed instruction, remediation person, media specialist, programer, teaching team leader, trainer of teachers like the staff associate of this program model). The equivalent of one summer will be concerned with role differentiation, as it is believed that each trainee must have a clear understanding of such current and emerging roles in education.

UNIQUE CONTRIBUTIONS

The program model developers describe the following features as unique:

1. Replacement of formal courses by series of experiences enabling trainees to meet performance criteria.

2. Provision for individual differences by use of flexible progress rate.

3. Opportunity for immediate application of theory to practice through use of small to large scale teaching activities.

4. Integration of the technical skills of teaching into a total teaching performance.

5. Extension of preparation into initial teaching years through assignment to portal schools.

6. Utilization of a computerized management control system to monitor individual trainee progress, predict staff, space, and resource needs, and provide data for program research and curricular development.

7. Provision for faculty retraining consistent with the demands of new roles in the model.

8. Description of a trainee selection system that reflects the performance criteria deemed necessary for teaching.

9. Preparation for specialization in elementary school teaching.

MODEL REVISION

Two features of the model should serve to keep the new program current: the pre-service/in-service continuum and the computerized management control system (CMCS).

The pre-service/in-service continuum provides for: (1) continuing interplay of university and public school staff, (2) immediate feedback on trainees for reviewing and updating their program, and (3) tryout of new ideas and materials and the testing of research findings. In-service phase field experiences will be planned jointly by counseling professors and staff associates of the portal schools; summer seminars will be staffed by counseling professors and staff associates. First-year trainees will return to the university campus for a general conference held for several purposes, including feedback on the operation of the program.

The computerized management system will provide: (1) detailed monitoring of each trainee's performance, progress, and status (PERT--Program Evaluation and Review Technique), (2) periodic batch-mode data to the program director so that he may anticipate program needs; and (3) batch-mode data to curriculum developers and researchers. The program model takes an explicit research posture, i.e., the program will undergo continuous evaluation and revision. During the early years of program development, much data will be gathered during the admission and screening processes. These data will be stored in the computer as part of a data bank for research purposes, such as identifying relationships between teacher characteristics and teacher behavior, variations related to success in training and teaching, or persistence in the teaching profession. It is believed that these opportunities for research may provide the incentives necessary for interdisciplinary staffing. Many faculty members should find it possible to meet their research obligations within the program.

RELATIONSHIP TO GENERAL EDUCATION

General education refers in this program model to that portion of university study that students of all future occupational choices have in common. The intent of general education is to expose students to the far-ranging accomplishments of the human mind and spirit and to encourage and free them to gain satisfaction from life while contributing to a better life for all.

Predictions for society and education by 1978 point up the need for an elementary school teacher to be broadly educated. General education, then, while important in its own right, is of double significance for elementary school teachers. In a very real sense they use their general education twice: once for themselves as maturing adults, and again as raw material for subsequent development in teaching. To a greater extent than in other professions, teaching draws upon the understandings, concepts, and precepts derived from general education for a large part of the content of its work and the attainment of its goals.

Students will devote approximately two-thirds of their time during the underclass phase to the study of general education courses, including both required and elective studies. It is expected that pre-service trainees will pursue academic studies in breadth and depth, devoting about one-third of their time to course work that is compatible with their interests and areas of concentration.

FEASIBILITY

On a large campus some of the best features of this model would present some of the major problems of implementation. In the words of the model developers, "As presently constituted, colleges and universities have neither the range of environments nor training personnel needed to accomplish this task." Few would disagree with the desirability of student involvement in pre-professional experiences on-campus, in community agencies, and in schools working with large and small numbers of children. Few would disagree with the need to individualize student programs, to have maximum program and schedule flexibility, to have a wide variety of learning experiences, to practice newly learned techniques, and to be evaluated on each performance. But no one would pretend that implementation of these features as described in the program model would be easy or cheap. Provision and management of the necessary amounts of space, materials, equipment, professional staff, and children on a large campus staggers the imagination.

Specifically, some of the major problems of implementation would be:

1. Securing a sufficient number of local children. Children "on demand" are difficult to produce for several thousand students.

2. Developing a sufficient number of quality "portal" schools. It would seem that this would require cooperative arrangements with many school systems, some of which would be located far from campus.

3. Securing and retraining faculty members. Convincing a large number of college educators of the need for extensive retraining, and helping them find the time to engage in this activity, will be difficult.

4. Involving faculty members from other colleges and departments on interdisciplinary teams. Considerable high-level administrative support and adequate inducements must be secured; otherwise, there will be no commitment to the program.

5. Securing adequate support staff, building facilities, and material resources. Vast quantities of money will be needed, to say nothing of time and professional know-how, to create the physical and managerial systems for program model implementation.

RELATIONSHIP TO RECOMMENDED STANDARDS IN TEACHER EDUCATION (NCATE)

It is not possible to establish the relationship between a program model and some of the NCATE standards, e.g., the conditions of faculty service or the adequacy of the library and the materials and instructional media center. But where relationships can be established, the Florida program model with few exceptions relates positively to the standards. The provisions for individual program planning, flexible scheduling, individual counseling, computer-based record keeping and data storage, faculty involvement with public schools, and the portal school concept for entering teaching would meet, if not surpass, the NCATE standards.

In the area of general studies, the program model appears to meet or exceed the minimum standards requirement of "one-third of each curriculum." The model program specifies that "The nature of such studies dictates that they be allocated to appropriate divisions of a university other than the school or college of education" and that "A major portion of the skills and understandings essential for entry into the pre-service phase of the model will be completed in general education studies" of the underclass phase. Also, "These entry skills, with criteria levels specified, will be identified by specialists in selected areas." Examination of available entry skills indicates that, as required by the standards, the emphasis is upon generalization rather than academic specialization. Upon admission to the program, the trainee's entry skills are evaluated and a program of activities is planned with the trainee "to enable him to acquire the requisite skill to satisfy criteria" in any area of deficiency. Two questions concerning the general studies component remain unanswered:

1. What opportunity for individualization will exist for students enrolled in general education courses during the underclass phase (prior to the time of admission to the program)?
2. In what way, or to what degree, will the program model faculty be involved in the selection of content for the general studies component of the underclass phase?

The Professional Studies Component of the standards specifies that the curriculum include "the systematic study of teaching and learning theory with appropriate laboratory and clinical experience." The program model meets this standard but it is likely that breadth of the theory and practice will be limited by the emphasis upon behavioral objectives. This emphasis, of course, was required of all program model developers.

Finally, the standards specify that "Part-time faculty meet the requirements for appointment to full-time faculty" and that such faculty's competence in terms of academic preparation, experience, teaching, and scholarly performance be comparable to that of full-time faculty. The program model makes such heavy demands upon faculty that its implementation without use of considerable numbers of part-time faculty is inconceivable. In fact, the program model specifically calls for the employment of staff associates from portal schools in on-campus summer seminars. This practice, one of the most desirable features of the program model, appears to be in opposition to the standard.

In general, the program model must be judged favorably when compared to the NCATE standards. Without doubt it more closely approximates the ideal program for preparation of teachers envisioned by NCATE than all or nearly all of our existent programs.

THE UNIVERSITY OF GEORGIA PROGRAM MODEL

Analysis by Dale F. Rowe

RATIONALE

It has become increasingly clear that our rapidly changing society with its concomitant problems demands a new look at our schools, the products they produce, the nature of our teacher training institutions, and the effects that such institutions ultimately produce in the classroom. The Georgia Educational Model for Elementary Teacher Education (hereafter referred to as the program model) demonstrates an awareness of current problems and projects a coherent plan that should alleviate many of the shortcomings presently evidenced in teacher training programs. The emphasis of the program model is on producing individuals who are capable of coping effectively with our rapidly changing society. The basic rationale for the program model is exemplified in the statement, "An instructional program for the preparation of elementary school teachers must be so designed as to satisfy the ever-changing needs of society and of the individuals of which it is composed in such a manner as to improve the conditions of man."

The rationale is the product of the meeting of educators from many departments of the University of Georgia. A total of 35 working papers were specially written which formulated a background for the structure of the program model. Therefore, the program is basically a reflection of the thinking of a variety of individuals representing diverse experience in education.

The Georgia rationale differs from many others in that the nature of the child is not the base upon which the program is constructed; rather, the state of society and interdependent relationships with its citizenry is of paramount concern. The authors of the program feel that pupils must effectively adjust to the demands of the society in which they live in order to be able ultimately to evaluate and control its progressive development.

In order to construct an educational plan designed to train teachers and their pupils to function effectively, it is necessary toproject patterns of society in the coming decades. Once the projected needs of society are determined, the nature of the elementary school that will fulfill these needs may be ascertained.

Consequently, the criteria for selection of the characteristics and components of the program model may be outlined. The program model lists a number of projects that will characterize society in the coming decades. Those which are of paramount importance in influencing the characteristics of the program model are as follows:

1. Population projections for the United States indicate a population near 250 million at the end of the 1970's.
2. Current trends toward urbanization will continue with some 75-80% of the population living in urban areas.
3. Value conflicts among a variety of social and political groups will continue to play an important role in maintaining the flux of our society with possibilities for even more serious conflict if social and political groups continue to polarize.
4. Mass communication will continue to accentuate common material and social desires for a large proportion of divergent segments of our society.
5. Progressive automation and rapidly changing technology will make it extremely difficult to project needs very far into the future.
6. There will be more leisure time for the blue collar worker and perhaps less for the professional.
7. Increasingly sophisticated advertising and public relations techniques will demand an increasingly sophisticated populace if consumers and voters are to make rational choices.
8. The population of the world and the ratio of non-white to white will continue to increase.
9. Tensions between nations, ideologies, and races will increase.
10. The "super powers" will be less able to impose their will and influence upon lesser nations. Greater sophistication is required to maintain positive international relationships.

The implications of the above for the educational planner are many. It is abundantly clear that they illustrate the need for change in our present educational scheme. It is necessary that any system of the future be more effective in producing individuals who have well-balanced personalities, are socially aware, and willing to take responsibility for evaluating the society and then facilitating an evolutionary improvement that is a product of a coherent, defensible plan. In order for pupils to become effective citizens, they must acquire analytical and critical skills, be able to work effectively in a variety of environments with the tolerance to meld a multiplicity of viewpoints. Attitudes concerning a specific society, or the world at large, must be based upon a broad spectrum of knowledge stemming from a wide variety of personal experience, appreciation of underlying facts and their relationships to one another rather than mere "on the surface" characteristics.

Implications of the projections for the future are summarized below:

1. Greater effort will have to be given to the development of the uniqueness of each individual.
2. Mass teaching will have to be replaced by a highly individualized approach.
3. Respect for cultural differences will have to be considered in the development of any educational program.
4. Major emphasis will have to be given the teaching of affective skills.
5. Critical thinking, inquiry, and problem solving will have to receive first priority in the cognitive area.
6. Learning experiences will have to allow for group interaction, personal realtions, and the opportunity for each individual to develop a more adequate personality.
7. Technology will have to be used to achieve educational purposes.
8. New uses of staff will have to be considered in order to apply individual teaching talents more effectively.

In terms of the components of the program model it is notable that it avoids a broad overall "philosophical response" to the above implications, but endeavors to evolve its plan for the future via specifically constructed characteristics built into the learning components of the teacher training program.

The school of the 70's, envisioned by the program model, provides experiences that stimulate thought development, idea clarification, and an awareness of the dynamics of human relationships. Specific cognitive skill-level expectations are reduced in emphasis. This is not to say that factual knowledge is eliminated from educational activities; rather, a higher priority is placed upon opportunities for formulating conceptual imderstandings that allow the learner to relate a variety of areas of knowledge with deeper appreciation. Significant interaction between student and learning material is necessary and therefore, one way communication imposed by a "teacher talk" type of class is supplanted with multi-media experiences. The former notion where the detailed specifics of the curriculum were imposed upon every student will give way to a program with built-in flexibility. The commitment will be toward building the program to meet the variety of needs associated with students who are seen as individuals. To the extent that the individual's backgrounds, interests, and needs vary, the school program shall provide a variety of modules of study that characterize different approaches to a specific problem as well as providing a number of levels of achievement. Each of these study modules will provide a challenge for individual student interaction resulting in the progressive growth of the individual. Sequence, priority of content and process, and continuity will become paramount concerns along with the individualization of the program so that the curriculum is characterized by a coherent set of experiences related to one another in such a manner as to minimize the fragmented and isolated subject matter characteristic of so many current programs.

A final point to be made regarding the rationale of the program model is that it takes full cognizance of the integral role played by state and local bodies that are also concerned with the developing pattern of education in the schools. Their participation is significant for one realizes that if these agencies are included in the initiation of the philosophy, and modes for implementation in the schools, then their responsibility with the university for the apprenticeship experiences of budding teachers is clear. In the past, many local schools have not had an intrinsic interest in the training of teachers, which resulted in limited effectiveness in the apprenticeship program.

The program model requires that cooperating "satellite schools" in the surrounding area play an important role in the pre-service and in-service experiences of the teacher trainees. These schools will provide a variety of opportunities for trainees to participate in classroom responsibilities and activities during various stages of their training. Figure 1 gives some indication of where classroom experiences may form a part of the trainees' educational pattern. The following discussion further clarifies this point.

High School Graduation	Para-professional or Teaching Aide	Teaching Assistant	Teacher with Area of Competence	Specialist (area)
	2-6 years	2-6 years	3 years or more	

A.S. in Ed.   B.S. in Ed.

Georgia Educational Program Model

Continuous progress through the phases of the program model

Figure 1. Paths in the Teacher Career Field

COMPONENTS

The University of Georgia's assessment of the current educational scene and needs for the future resulted in an extensive "job description" which permitted the categorizing of teaching tasks into four levels: aide, teaching assistant, elementary teacher, and specialist. These levels of training are associated with pre-professional, professional, and specialist components of the program model.

A job description for each level was prepared. The division of the teaching role into a variety of levels has allowed the teacher training process to be broken into a series of levels. Such a plan is predicated upon staff differentiation within the school as well as a variety of achievement levels in the teacher training program itself. The increased flexibility extends to the trainee the opportunity to enter to leave the program at various points, giving him more options in his career planning. Figure 1 helps to illustrate this pattern and its relationship to the program model.

It is obvious that the writers of the program model are convinced that there is a strong tendency for a teacher's behavior in the classroom to be a reflection of the manner in which he was taught. This conviction is reflected by the philosophy as well as the components of the program model whereby the character and sequence of the learning activities and experiences are specifically designed to orient the student toward effective attack upon the problems listed in the inferences for educational demands of the future. The components and methods of the Georgia teacher training program directly reflect the pattern of behavior expected of the teacher in the classroom. Illustrations of how this is accomplished in the program model are contained in succeeding sections of this report.

The pre-professional program requires approximately eighteen months and includes twelve weeks of on-the-job training. Ninety percent of the learning activity of the pre-professional is in the liberal arts with the remaining ten percent devoted to his role as a paraprofessional. After nine months of training the student is competent to act as a teacher aide. Approximately twelve weeks of on-the-job paraprofessional training is required of the student. This training takes place in one of the cooperating satellite schools. Six weeks of this time takes place midway in the first half of the period and six weeks takes place midway in the last half of the training period.

The professional program will require approximately twenty-two months for completion with approximately twenty-five percent of the time in liberal education, thirty percent in a specific area of competency, and forty-five percent in professional education. During this phase of the program, the student will have three on-the-job laboratory experiences of approximately six weeks each in one of the satellite schools. These lab experiences are schedules to expose the trainee to a variety of age groups having various socioeconomic and ethnic characteristics. A student finishing the requirements as outlined by the performance specifications associated with the professional program will have fulfilled the prerequisites for entrance into the specialist program.

The specialist represents the highest level of competence projected in the program model. A specialist is a professional worker who possesses all of the qualifications of a general elementary teacher but also has additional professional and supervisory competencies in a particular subject area of professional service such as curriculum, educational media, human development and learning, evaluation, pupil personnel (guidance), professional development, or school-community relations.

The two-year period required to complete the experiences for specialist is characterized by a changing ratio of activities as the period progresses. In the course of the training period approximately twenty percent of the trainee's attention is given to specialized training related to local conditions. At the beginning of the training period there is an even forty percent split between instructional improvement and professional development and a common core of basic content. As training continues, increasing emphasis is placed upon the former until it requires sixty percent of the trainee's time while the latter requires twenty percent of his time. Figure 2 lists sample activities associated with the various levels.

From this pattern one can see a trend toward greater involvement with the specifics of preparation for each increasingly complex role in the differentiated hierarchy of teaching. These roles are associated with the levels of teaching assistant, teacher, and specialist. The program model is specifically oriented toward providing the trainee with experiences that reflect successive levels of competence.

Lists of desirable teaching behaviors were carefully determined by interdisciplinary teams under the leadership of specialists in program development and evaluation. These were associated with the job descriptions and provided a guide for the statement of extensive performance specifications which in turn are guides for the production of specific packages of work called proficiency modules (PMs). The PMs provide a framework of study for the student. Rationales to support each PM of the model stem from the performance specifications compiled for each level of competence.

Activities of Aides

1. Collects money; keeps records
2. Assists in playground activities
3. Operates audio-visual materials
4. Distributes materials

Teaching Assistants

1. Reads and tells stories to pupils
2. Explains school rules to pupils
3. Locates reference materials for teachers
4. Makes arrangements for field trips

Certified Teacher

1. Analyzes pupil behavior to determine levels of mastery
2. Listens to pupils talk about themselves
3. Organizes groups for reading instruction
4. Confers with parents

Specialists

1. Uses new and innovative instructional methods
2. Prepares demonstration lessons
3. Speaks to lay groups
4. Assists individuals with instructional problems

Figure 2. Sample Activities in the Job Description

There are seven parts to any PM including classification, general directions, content, prerequisites, pretest, learning tasks, and the post-test. The four essential parts to each PM learning task are purpose, resources, procedures, and evaluation.

Student involvement with the PMs is aimed toward the achievement of specified teaching behaviors. These activities form the core of the model's pre-service and in-service teacher education program.

The teaching behaviors are the result of defining the role of the teacher and the formulating of competencies necessary to perform the teaching tasks.

The behaviors were categorized into three levels: the teaching assistant, the certified teacher, and the specialist. The system for classifying behaviors was an adaptation of the well-known taxonomies of Krathwohl and Bloom. "The desired behaviors have been classified according to the highest level of learning necessary for optimum performance in specific positions. The assumption is made that the objective in one class makes use of, and is built upon, the behaviors in the preceding classes. For an example, see Figure I-1."

The performance specifications are designed to describe particular competencies that teachers should possess in order to operate at optimal effectiveness. Reference to Figure I-1 reveals three levels of development in both the cognitive and affective domains. Generally, the teaching assistant should exhibit the specified behaviors after two years in the program; the teacher after four; and the specialist after six.

Some 2000 specifications for teacher performance have been developed in the following categories:

Drama
Composition
Cognitive Processes
Psychology
Educational Tests and Measurement
Pedagogy
Social Studies
Speech
Reading
Literature
Listening
Mathematics
Media
Science
Instructional Improvement and Professional Development
Specialized Training Related to Local Conditions
History of Religion
Art
Music
Health
Physical Education
Philosophy
Guidance and Counseling
Social Foundations of Education

3.02 Performance Specifications--Educational Tests and Measurements

Characteristic	Level of Development					
	Cognitive			Affective		
	Teaching Assistant	Teacher	Specialist	Teaching Assistant	Teacher	Specialist
3.02.02 Historical background and overview of educational measurement.		1	3		1	3
3.02.02 Purpose for and components of a test guide.		3	6		1	3
3.02.03 Different types of items and teacher made tests.		3	6		1	3
3.02.04 Instructions for and administration of tests.	1	3	6		1	3
3.02.05 Normative data.		3	6			
3.02.06 Interpretation of test scores.	1	3	6		1	3
3.02.07 Desirable test characteristics.		3	6		1	3
3.02.08 Gain experience in finding test information.		3	6		1	3
3.02.09 Standardized intelligence tests.		2	6		1	3
3.02.10 Special aptitude tests.		2	6		1	3
3.02.11 Achievement batteries.		2	6		1	3
3.02.12 Techniques of self-appraisal.		2	6		1	3

Figure I-1. Performance Specifications--Educational Tests and Measurements

The program model is consistent philosophically in that it provides a variety of means for preparing individuals to experience the challenges of the teaching role at a number of professional levels. Competencies are specifically identified and associated with clearly delineated learning experiences that provide a guide for acquisition by the trainee in a variety of ways. Methods for constant evaluation of the trainee allow him freedom for an individualized pattern of activities that permits progress at an individualized rate. It should be apparent that a program with such built-in flexibility geared to a variety of roles will not be casting teachers from one mold. As students vary in their interests and abilities, their training will provide them with the ability to be effective teachers in meeting a great variety of challenges. The methods of the training program will provide the teacher with a functional model for attacking future problems in his career. Assuming this is true, one can visualize a teaching corps characterized by individuals who are ever growing in their effectiveness to meet varying educational challenges.

OUTCOMES

The primary outcome of the model program is the production of teachers with attitudes and abilities that will insure their optimum effectiveness in the face of continuous social and educational evolution. It is recognized that graduates must have the well-being of their pupils and society as a paramount concern. They must have the dedication and ability to make significant contributions toward the positive growth of both pupil and society.

Goals such as these are predicated upon the assumption that our teachers are adequately prepared pedagogically and have well-balanced personalities to the extent that they can give top priority of attention to their teaching role.

Essential teacher behaviors are explicitly spelled out in extensive performance specifications. In addition, personality attributes sought are elucidated in detail through a set of specified characteristics which are parallel to the performance specifications. They do not attempt to separately measure levels of development.

The PMs provide many sequences of activities for the acquisition of specific skills and attitudes. They lend themselves to the individualization of the trainee's program due to the multiplicity written to provide experience toward achieving any specific teaching objective. A student's choice of PMs may best reflect the current state of his interest and development. They allow the individual to avoid duplication of learning experiences as well as permitting him to proceed at an individualized pace.

INSTRUCTIONAL TECHNIQUES AND PROCESSES

The program model stresses the need for consistency between the mode of education of the teacher trainees (the students) and their future classroom behavior as teachers. Teachers must be trained to be effective leaders in the classrooms of the future. The Georgia Feasibility Study views the elementary school of the future as having the following characteristics:

> "Instruction in the future elementary school will consist of cooperatively-selected experiences ranging from self-instruction to mass-instruction in groups of from one to several hundred. Self-initiation will become central in the instructional process and the school will provide the instructional resources. The degree and amount of social interaction among adults and children will increase as routine and peripheral activities are either eliminated or handled more efficiently.
>
> "The elementary school will cease to exist as a generally separate institution within the larger society. The need for a physical facility called a school, where almost all of the learning takes place, will be seriously challenged. As children participate in some of the activities of the community, and as the community involvement in the school increases, currently existing gaps in perception and expectation will be narrowed.
>
> "An instructional team will be necessary to carry out the program proposed in the preceding paragraphs. Specialist, generalists, and nonprofessional personnel will make up these teams. Teaching tasks will be differentiated so that the most appropriate use will be made of each member's talents. Extensive team planning will ensure that each pupil is carefully guided and nurtured through his learning experiences.
>
> "The prospective elementary school of the late 1970's will have variability as its most striking characteristic. However, variability will not be interpreted as lack of agreement, confusion, or chaos. Rather, the variability will simply reflect the variability of the clients of the school program. There will probably be more universals and more general agreement among educators, parents, and the society than is currently available. Those universals will come from the growing research base upon which the education of children in elementary school will be predicated."

The learning tasks of the program model utilize methodological approaches that are regarded by specialists as most efficient in guiding students toward the desired ends. Cognitive skills and affective appreciations that do not lend themselves to the individualized approach are written as directives for social interaction requiring the cooperation of one or more students. At times the need for the participation of a variety of individuals will indicate seminar grouping.

The functioning of behavioral objectives in the educational setting has been elucidated by Mager and others. Recent experiences, especially at the high school level, have shown that proper administration of programs based upon behavioral objectives and the PM method offer very attractive gains in terms of student achievement in both cognitive and affective domains.

As has been mentioned the chief components of the program model are exemplified in the PMs which represent the basic strucutre of the learning program. Experience with proficiency modules provides extensive opportunities for acquiring cognitive and affective learning in a practical manner as the trainee completes tasks via a variety of media or types of educational involvement. The seminar, micro-teaching techniques, and the laboratory classroom are all important facets of the program.

In addition to the variety of involvement that takes place at the teacher training institution, one must not lose sight of the fact that an integral part of each level of training is supervised on-the-job experience in the cooperating satellite school. The extent of this training was outlined previously.

ROLE OF THE TEACHER EDUCATOR

The teacher educator must periodically assess available data indicating the progress of an individual student. Such data are obtained largely through observation of the student in microteaching situations, in the laboratory school, and during participation in seminars. As a result of such student assessment, it is the role of the teacher educator to counsel the trainee concerning his future activities. During counseling the student might be asked to eliminate deficiencies, take a side excursion to gain depth in an area, or advance to the next logical step.

In addition to the teacher educator's role as an evaluator and counselor of the student, he is also a constant evaluator of the training program itself. He must assess the adequacy of the PMs and performance specifications within them. Existing PMs will require modification and new ones will be required to fill gaps as well as to add flexibility to the program.

There will be times when the teacher educator will be called upon as a resource individual, seminar leader, or lecturer. He must maintain constant contact with the field operation of the pre- and in-service classrooms. This will require close cooperation with the administrators of the satellite schools.

EVALUATION TECHNIQUES

An integral part of the program model is the constant evaluation of the individual's progress as he moves through each phase. Evaluation is accomplished on two levels. First, the PMs require responses that lend themselves to computerization. This then allows a human evaluator to efficiently assess the trainee's progress and counsel him effectively by either recycling him through a phase, providing an alternate phase, or sending him to further development. Secondly, students are evaluated by teacher educators or master teachers in light of their participation in seminars, microteaching experiences, or on-the-job training.

Accompanying the PM are the performance specifications, which describe particular competencies required of teachers in order for them to operate with optimum effectiveness in a variety of teaching situations. The counselor, as ultimate evaluator, may use the resources of the PM responses, observation of teacher performance as measured by level of proficiency on the performance specifications, along with frequent personal conferences to guide the educational pattern of the trainee. Constant, individualized feedback from an experienced counselor should provide a coherent basis for the progress of the individual student.

Compared with other current programs, the Georgia program model provides greater flexibility of response to individual student needs. The individualized pattern provided by the PMs allows the teacher educator to guide students into a variety of tracks providing for individual student interests as well as the training of individuals for specialized teaching roles at a variety of levels. As the society evolves and the needs for varieties of teachers fluctuate, the training program is geared to respond accordingly.

RESPONSIVENESS TO SOCIETAL AND PROFESSIONAL NEEDS

In its rationale the model program specifically addresses itself to producing teachers who are uniquely equipped to operate effectively in tomorrow's society. The Georgia Feasibility Study states the following concerning the schools of the 70's:

> "The concerted effort of professional school personnel, parents, and members of the community will develop a sense of unity and consistency in the education of children. The elementary school will serve the greater community and, in turn, will be served by that community with increasingly cooperative interaction.

> "The educators will have attained a sophistication in the selection and utilization of technology by the late 1970's, which will allow for rational and defensible use of the hardware and software. Educators will be asking industry for particular devices and procedures to meet objectives stated by educators. There is no question as to the growing role of technology as a supplement to the human interaction aspects of elementary education. Educators will apply technology where the end result will be more efficient and effective learning, and will provide increased opportunity for person-to-person transactions.
>
> "The elementary education program will not be the sole surveyor of technological education, and the broadened availability of homebased technological devices will be used to further supplement the education of the child."

The pre-service and in-service training of each teacher will take place in a number of school settings challenging the trainee to work effectively under a variety of socioeconomic and ethnic conditions. The program model offers the flexibility for individuals to specialize as teachers for the disadvantaged, or specific ethnic groups, for which society may have a special need.

The program model provides a variety of settings which require the use of the latest technological devices. Integral to the program are experiences that not only create desirable teaching behaviors but also exemplify the characteristics of the well-balanced personality.

Staff differentiation is facilitated through the specifically delineated levels of competency which characterize the program. Trainees will find no barriers to terminating their training, either temporarily or permanently, at a variety of levels, thus providing schools with a personnel pool with differentiated abilities.

Personnel of satellite schools will have the opportunity to increase their level of training as a part of the administrative cooperation with the program.

UNIQUE CONTRIBUTIONS

Outstanding educational contributions offered by the program model are exemplified by the following characteristics. Educational objectives are clearly stated in terms of behaviors expected of the student. Definite means are offered for the achievement and specific evaluation of the objectives. The student is placed in a psychologically advantageous position whereby he is directly responsible for the progress of his education. He is not there to serve the system; rather the system is there to serve him. The great variety of methods and media by which a student gains his experience is bound to be reflected in the manner in which the future teacher presents learning experiences to his students. There is a "teach as taught" effect. The nature of the teacher's training tends to assure his effectiveness as a self-motivating problem solver; to the extent that this is true, he will continue as such and remain an individual who is flexible and continuously growing as he interacts with the demands of his profession.

The program model is conceived of as a twelve-month operation. Thus, more efficient use can be made of professional staff, student time, and the operating plant itself. Such a plan allows staggered registration, which might take place monthly, or whenever 25 to 30 individuals, constituting an administrative "class," are ready and facilities are available.

The program model builds a framework for significant pre- and in-service training of teachers. This framework is dependent upon clearly delineated working relationships with cooperating schools in the surrounding areas setting a pattern of close cooperation between the teachers college and the school; such patterns will certainly help to build an increased awareness of the needs and responsibilities of each of these types of institutions.

Certainly of great importance is the total commitment for the training of teachers to serve the needs of a rapidly changing society and student population. The teacher products of the program will have had tye types of experiences that should help to insure their continuous growth as teachers.

MODEL REVISION

As described above, an integral part of the program model is the continuous evaluation of the PMs and performance specifications in the light of their effectiveness in training students for their role as teachers. As teaching roles evolve, adequate awareness of this fact will be insured as a result of the intimate relationship maintained with the satellite schools.

Evaluation and revision of the PMs and performance specifications are seen as a continuous process; this characteristic of a program in constant flux helps to insure that it remains relevant and viable in view of the demands of an evolving society.

FEASIBILITY

It is difficult to project the feasibility of the program model to a variety of schools. Unless on has reasonable knowledge of numerous factors such as student numbers, abilities and attitudes of staff, physical resources, one cannot make too many generalizations. At the same time, one can state some necessities that are paramount to effective implementation. Greater flexibility for the utilization of space would likely place some demands upon institutions whose programs are typified by the lecture technique. Perhaps fewer large lecture rooms would be required and more small classrooms, conference rooms, and microteaching labs would be required.

Greater stress would be placed upon the use of equipment such as computers, video-tape, and tape recorders. Most important of all would be adjustment in the roles required of the teaching staff. Presumably the lecture technique would be represented in but a very small proportion of the activities of the program. Of greatest importance would be small group discussion leaders, observers, and counselors. Relationships would be characterized by interpersonal interaction. While few lectures would be prepared, continuous writing of new and revision of old PMs would be required. Needless to say, some educators would choose not to participate in this role; at the same time, others would find such a role much more exciting than that presently characterizing college level teaching.

More "teaching" personnel, with differentiated roles, would be required by the GEMS program. Total salary costs would not increase in proportion to the increased personnel due to the fact that salaries would vary with the role and consequent responsibilities.

No doubt the costs of initiating such a program would be high. After two or so years, cost would diminish significantly as hardware was procured, but perhaps not to the level of economy of current teacher training programs. Perhaps the best argument for the increased costs of the GEMS program would be that increased teacher effectiveness would merit the increase in training costs.

It would seem a very difficult undertaking to incorporate this program by making one massive changeover. There are many obvious arguments for programing, via systems analysis, an evolutionary change associated with specific deadlines and budget projections. It is doubtful if many institutions could make the changes in personnel, plant, and budget in the course of one year.

RELATIONSHIP TO RECOMMENDED STANDARDS IN TEACHER EDUCATION (NCATE)

A final consideration is whether the model adequately meets the standards proposed by the National Council for Accreditation of Teacher Education. Detailed study of their newly proposed standards, published in November 1969, indicates that the GEMS program, as projected, would in many cases likely exceed the criteria used for judging the adequacy to which the standards are observed. This holds true for Part I: Basic Teacher Education Programs. Part II of the standards deals specifically with Standards for Advanced Programs. While the program model extends to what would be a six-year program for most students, it is difficult to say at this stage whether it meets in detail each of the standards. One would be inclined to assume that NCATE standards will be adequately met when all of the details of the GEMS advanced program model are worked out and presented. This assumption is based on the excellent congruence of the basic teacher education plan with the standards.

It is interesting to note that the discussion of curricula in the NCATE standards makes special note of the need "to prepare teachers with special competencies such as teachers for bilingual children, teachers for disadvantaged children." Certainly the program model has the flexibility and commitment to encourage the development of such specialists. Also of note is the statement that programs in general education should be individualized according to the needs and interests of students. Unfortunately, the term "individualized" can suffer a variety of interpretations. The discussion goes on to state that "It is further assumed that the selection of content for the general studies component is determined jointly by faculty members in academic areas and those in teacher education."

The five standards listed below are representative of areas where the program model promises to be outstanding:

1. Members of the teacher education faculty have continuing association and involvement with elementary and secondary schools.

2. The institution has a well-defined plan for counseling and advising students in teacher education.

3. The institution has representative student participation in the evaluation and development of its teacher education programs.

4. The institution conducts a well-defined plan for evaluating the teachers it prepares.

5. The institution uses the evaluation results in the study, development, and improvement of its teacher education programs.

In summation, the Georgia Educational Model Specifications for the Preparation of Elementary Teachers may be characterized as a program stressing individualized instruction based upon proficiency modules containing clearly stated behavioral objectives and evaluated by defined performance objectives. Student initiative is nurtured throughout the program whereby the individual has significant control over the pattern and rate of his student program under the continuous guidance of an expert counselor. Opportunities for frequent application of learning experiences are present via the working laboratory, microteaching, and the clinical satellite school. Evaluation of both the student and the program is constant, insuring an ever progressive pattern of development. The student is taught as he is expected to teach. This and the fact that he is continuously learning to recognize and solve educational problems in a self-motivated creative manner helps to insure that both program and students will be in a state of positive flux, ever improving their abilities to cope with an educational problem, ever aware of the evolving challenges of our increasingly complex society.

THE UNIVERSITY OF MASSACHUSETTS PROGRAM MODEL

Analysis by Charles Chance

RATIONALE

The rationale or foundation of the University of Massachusetts program model is based on the assumption of a rapidly changing society. In order to keep pace with a changing society, education must undergo radical changes in the decades ahead. We must ensure that the change process becomes an integral part of the educational structure. An analysis of educational roles, tasks, structures, and objectives must be made. To make education truly responsive to the changing needs of both society and individuals, we must pay close attention to goals and their criteria at the outset. Goals that lead to a flexible organizational structure are attempted in the program model.

Also discussed in the rationale of the program model are the current efforts to distinguish professional from nonprofessional tasks and concern for new staffing patterns within the elementary school. Efforts are made in the program model to recognize the more relevant and fruitful distinctions that should be made within the teaching profession. Guiding the attempts of the program model is the notion that teaching is a single universal function and teachers are interchangeable parts, assignable indiscriminately whenever a position is open.

The program model represents a concerted attempt to face head-on the challenges of change, making teacher education socially relevant, and individualizing instruction within the framework of teacher education. The success of the program model will depend on institutions taking the necessary steps to make the process of change natural.

COMPONENTS

To review the components of the program model, parameters for the program model must be established. The program model is based on performance criteria rather than time criteria. Performance criteria are defined in the program model as essentially behavioral objectives. They state the behavior expected of the teacher, under what conditions the behavior will be performed, and how the behavior will be evaluated. The areas of competencies for which performance criteria have been written are Cornerstone Criteria, Content Criteria, and Service Criteria.

The Cornerstone Criteria consist of competencies in human relations and behavioral skills. In these two areas, a teacher acquires a better understanding of himself, others and his relationships to others, and develops teaching skills to help him become an effective teacher.

The Content Criteria consist of science, language arts, mathematics, aesthetics, social studies, and foreign languages. The substance of these areas has been modified in order to reflect the performance criteria philosophy of the program model.

The Service Criteria include performance criteria dealing with evaluation, media, supervision, and technology. The areas of competencies reviewed above are defined whenever possible in the program model. The trainee is permitted to decide if he wants to be a specialist in a particular area or a generalist with a certain level of competency in each area.

The program model was conceptualized on the basis of the constructs of General System Theory. General System Theory provides a comprehensive method of organizing objectives and translating those objectives into program specifications. The program model systems input consists of prospective teacher trainees, related personnel data, and resources necessary to operate the system. Outputs of the program model include trained prospective teachers and various statistical progress and research reports. The teacher trained by the program model must compete with other similar teachers. Components or subsystems are postulated to operate in an optimum environment. An optimum environment is one where each component operates with a minimum of friction. The components of the program model are summarized below.

The first component is the Control Subsystem. This subsystem maintains the operation of the program model on a day-to-day basis. Continual analysis of collected data provides the input for decision making. Also the Control Subsystem provides immediate feedback for control. The following functions are performed by the Control Subsystem. The first is called the aptitude assessment function. A comprehensive diagnostic testing program is conducted to assess personality factors, intellectual ability, socioeconomic background, and previous knowledge of subject matter and teaching. Second is the guidance function. Appropriate performance criteria and strategies are selected by the trainee and his advisor. Third is the scheduling function including forms of participation and instructional alternatives as the student progresses through the program model. Fourth is the attitude monitoring function. The monitoring of the trainee's attitude toward instructional alternatives, staff members, and instructional methods will serve as data for evaluating the effectiveness of routes to the performance criteria.

The second systems component is the Administrative Subsystem. Primary functions performed by this component are supplying materials, professional staff, and non-teaching personnel. Allocating funds and coordinating the program model within the university and agencies outside the university would also be a function of the component.

The third component is the Information Subsystem. Primary functions of this component are data storage, data collection, and data manipulation for system control and decision making. A complete filing system of six categories is proposed within the Information Subsystem.

The fourth component, which is not completely within the bounds of the system, is the Placement Subsystem. The important task of the Placement Subsystem is to disseminate information about the teacher training program andthe trainee of that program to prospective employers.

The fifth component is the Educator Subsystem. This component is divided into two not completely distinguishable components, human and automated. Included in this component are the instructional methods to be utilized by the trainees in the program model.

The sixth component is the Analysis Subsystem. This component provides information on the quality, success, competency, acceptability, and competitiveness of the system output. Comparative analysis would be made utilizing three samples: program graduates, graduates of other teacher education programs, and the population of experienced teachers.

In summary, the components of the program model represented as subsystems would give direction, structure, supporting functions, and feedback data necessary for a continuously changing open system.

OUTCOMES

The program philosophy and rationale are reflected in the expected outcomes for trainees. One outcome of the program model is an effort to bring training and education in human relations into sharper focus and to provide a system whereby instruction and experience may be provided for teacher trainees. Society needs teachers who are capable of "warmth," "empathy," and "critical thinking." The program model attempts to reflect these concepts by utilizing the system approach, coupled with performance criteria and the conception of behavioral systems. This leads to a fuller understanding and more precise definition of human relations functions.

The underlying assumption is that all behavior exists in a human relations framework. The program model attempts to specify behavioral objectives to demonstrate this assumption about human behavior. It is important to recognize that the program model utilizes a system approach to human relations behavior. The program model stresses the wholeness of man and the fact that any effort to divide human experience into parts may be artificial. Yet, it seems clear that if one is to understand human experience fully it may be necessary to separate interdependent areas of human or life functioning from other areas. The program model discusses the relationships between the intrapersonal system and interpersonal system and the resulting behavioral system.

The program model specifies behavioral outcomes organized in performance criteria skills and teacher behavioral skills. The main vehicle for demonstrating these behavioral skills is microteaching. Eighteen technical skills have been identified in the program model which are organized in five themes: repertoire, questioning skills, increasing student participation skills, creating student involvement skills, and presentation skills.

Among the outcomes sought are teachers who are skilled in aesthetics, language arts, social studies, science, mathematics, foreign languages, and pre-school. Performance criteria that attempt to describe these skills in prospective teachers are listed in the appendix of the program model. However, a brief summary of each skill will give the reader an overview of the expected behavioral outcomes expected in the trainees.

Aesthetics education has been a relatively untouched area. The program model identifies three basic skills utilized by creative persons in the arts regardless of discipline. The first skill involves the ability to free oneself from perceiving things within the limits of verbal description and developing skills that increase the variety and complexity of sensory intake. The second skill is the ability to form relationships between these sensory experiences. The third skill is the development and intensification of the aesthetic experience.

The language arts teacher, to perform his function adequately, must satisfy four aims. First, he must demonstrate knowledge of the process of communication. Second, he must demonstrate proficiency in the content areas. Third, he must demonstrate the ability to assess the child's level of development and to diagnose his skill needs formally and informally. Fourth, he must demonstrate the ability to select an appropriate approach from many known approaches based on the individual child's diagnosed strengths, weaknesses, developmental stage, and observed learning patterns.

The social studies teacher must exhibit skills in four separate areas. First is the ability to organize and analyze social science knowledge. Second is the ability to use the basic tools and skills of the social scientists. Third is the understanding of value orientations that affect societies throughout the world. Fourth is the ability to make social studies a meaningful part of a student's developing awareness of society.

For the science teacher to deal effectively with the nature of science the program model lists three major areas of concern. First is the relationship between content and process knowledge and the thinking that leads to and emanates from that knowledge. Second are the values and attitudes that one brings to and takes from the study of science. Third are the scientific skills that one needs to operate successfully in science.

The mathematics teacher's competence levels identified in the program model range from understanding to application. Four types of competencies are identified in the program model. First is the ability to perform correctly the computational skills and the application of algorithms, and the ability to solve problems. Second is the ability to understand the mathematical principles and structures needed to carry out the processes involved. Third is the ability to diagnose the student's level of development. Fourth is the ability to select pedagogically sound techniques and materials to satisfy skill needs.

Performance criteria developed in the program model for the foreign languages center around the FLES program. Primary competencies have been identified in subject matter competency, presentation competency and professional decision making competency. Flexibility and adaptability are the key concepts to be explored in the program model.

The program model postulates that the purpose of pre-school education is to capitalize on the growth conditions of children in their early years. The performance criteria for pre-school teachers consist of five broad areas. First, cognitive enrichment in a loosely structured environment is possible and necessary. Second, teachers must address themselves to the development of human potential. Third, teachers should experience actual encounters with children and environments to provide subcultural awareness. Fourth, teachers should help develop cognitive and affective skills. Fifth, a complete knowledge of child development in the physiological, sociological, and perceptual areas is paramount for effective teaching.

The program model specifies three performance areas in the Service Criteria. An attempt is made in the program model to write performance criteria in evaluation skills, media, and supervision.

The evaluation skills are designed to compensate for the inadequacy of present practices of teaching tests and measurements as the basic empirical skills in teacher education. The skills and activities developed in the program model differ in regard to purpose and scope of evaluation. The program model evaluation skills are based on the assumption that the basic processes of evaluation are common to all, but the expertise required for varying levels of evaluation is vastly different. Evaluation skills in the program model are considered to be a common set of techniques utilized by both elementary teachers and computer specialists, by guidance counselors and test designers.

The media specialist skills in the program model are based on the assumption that the media specialist would operate as a teacher, curriculum advisor, technician, and purchaser and cataloger.

The program model assumes that teacher trainees should have exposure to theories and skills of supervision. In its broadest sense the program model defines supervision as the improvement of instruction. The specific skills and techniques for which performance criteria can be written are: observation methods, feedback techniques, counseling techniques, knowledge of paradigms of teaching, supervisory strategies, and evaluation skills.

INSTRUCTIONAL TECHNIQUES AND PROCESSES

Throughout the program model strategies of instructional techniques and processes are suggested for the teacher trainees. Strategies include: live instruction, simulation, microteaching, video-taped teaching episodes, programed instruction, and role playing that illustrates examples of different instructional techniques suggested in the program model. The instructional techniques and processes needed to execute a performance based curriculum will vary from performance criteria to performance criteria. For example, a performance criterion in science could suggest the following instructional alternatives: programed learning, inquiry process, seminar, reading, course work, CAI, tutoring children and being tutored. Instructional alternatives and processes suggested throughout the program model are consistent with the rationale of the program model.

ROLE OF THE TEACHER EDUCATOR

The program model asserts that a new order of professionalism is needed. It explicitly postulates areas of change in professional competence and professionalism. The program model utilizes differentiated staffing patterns, horizontal and vertical distinctions among teachers, inert and active tasks involved in teaching as criteria for identifying the function of teachers. We must establish structure in our schools and in our teacher education programs that allow levels and kinds of professional competence to be recognized, thereby highlighting abilities that the existing structure blocks out. The program model identifies teacher intern, associate teacher, staff teacher, senior teacher, and master teacher as differentiated levels of responsibility. Teacher aides and educational technicians are also identified in the program model. The explicit role of the teacher educator is not clear in the program model.

EVALUATION TECHNIQUES

The program model has been conceived as a system with identifiable characteristics such as performance criteria, multiple exist and entrance points, instructional alternatives, technological innovations, and system modification and regeneration. Each of these characteristics depends heavily upon data for development, revision, validation, and acceptance. The program model continuously utilizes the data collected in the setting where the program is executed. Thus, information gathered in the field will be used by the Analysis Subsystem, while information gathered at the university will be used by the Control Subsystem.

The primary function of the Control Subsystem may be summarized as follows: The appropriateness of educational goals to teacher trainee's abilities and ambitions, the availability of appropriate equipment and personnel, the interaction of equipment and personnel with theteacher trainees, and the appropriateness of this interaction to the trainee's educational goals. If one or more of these functions is poorly controlled, the performance of the system may be degraded with respect to the trainee's objectives. Two other important activities performed by the Control Subsystem are scheduling and student evaluation and guidance. Also the Control Subsystem helps students to determine goals in terms of a specific set of criteria and determine a sequence of instructional alternatives designed to help the student achieve proficiencies consistent with these determined goals.

The Analysis Subsystem is designed to operate as a controlling function to the program, gathering and feeding back information to the program model concerning the quality and quantity of system output. This subsystem of the program model is designed to: (1) identify social trends which place new demands in competence on teacher education curriculum, (2) approximate manpower shortages, (3) promote solutions to social needs such that the system is able to maintain social relevance, (4) estimate in terms of multiple measures the degree of success attained by program graduates, (5) compare products of the program model with experienced teachers and with products of other teacher education programs, (6) identify evidences of malpractice that occur systematically and can possibly be linked to flaws in the program model, and (7) ascertain acceptability of program model products in the field of practice.

RESPONSIVENESS TO SOCIETAL AND PROFESSIONAL NEEDS

It was pointed out in the evaluation section that the primary responsibility of the Control Subsystem and Analysis Subsystem was to be responsive to societal and professional needs, both internal and external to the program model. To make useful predictions of expected occurrences and opportunities, information is sorted and classified into actual problems of performance by the program model.

One of the basic underlying assumptions of the program model is the need for a new professionalism in education. Education, to survive in the rapidly changing time ahead, must find new ways to adapt to the environment. The program model asserts that education for the future requires more than adaptation. New professionalism will demand that education and teachers provide leading roles for the society of the future.

UNIQUE CONTRIBUTIONS

One unique contribution of the program model is the attempt to apply specific performance criteria to evaluation, media, and supervision. In the past many elementary teachers have ignored or failed to understand these criteria. The attempt to incorporate change, social relevance, and individualized instruction within the framework of a teacher education program is a concerted attempt to face head-on the demands of the future. One of the central concerns of the program model is the behavior exhibited by the trainee after his instruction has been completed. The program model has made many specific value commitments as to the type of human behaviors considered desirable for elementary teachers. The performance criteria identified in the program model provide a unique contribution to other universities as they attempt to specify, analyze, and evaluate their teacher trainees.

MODEL REVISION

Feedback regarding the quality, success, competency, acceptability, and competitiveness of the system output is provided by the program model. This feedback is used to add, delete, and modify performance criteria, The analysis of trainee performance, and indirectly the effectiveness of performance criteria, is measured using rating procedures, video tapes, achievement data, and market value of trainees. Comparative analyses are made of their groups, program graduates, graduates of other teacher education programs, and the population of experienced teachers.

RELATIONSHIP TO GENERAL EDUCATION

The relationship to general education is not clearly identified in the program model. In the program model teacher trainees have the opportunity to decide if they want to be specialists in a particular area or generalist elementary school teachers with certain competencies in each performance criteria. The program model requires that each trainee meet a minimal criteria level in each performance criteria. The rationale for this requirement is the belief that every elementary school teacher should know something about the various areas of competency represented by a differentiated staff, if for no other reason than to improve communication and open-mindedness among the teachers. The program model does not specify percentages of time that each trainee should spend on performance critera or related subjects found in a typical course of study. No specific requirements of courses or performance criteria in relationship to time, number of units required, or relationships to other colleges in the university complex are identified by the program model.

FEASIBILITY

The implementation of the program model in a university setting such as The Ohio State University presents some complex issues of planning, coordinating, implementing, and evaluating.

Graduation from the university depends not upon performance criteria but upon the satisfactory completion of unit and time criteria. If the College of Education were based on a performance criteria, it would be operating in a divergent fashion from the rest of the university; and it would be in basic conflict with the course-unit-time system of university regulations. The issue raised here must be understood against the background of the characteristic relationships between Colleges of Education and other areas of the universities.

To implement a curriculum based entirely on performance criteria is probably unrealistic in the near future at major institutions such as The Ohio State University. It is clear that a College of Education based on performance criteria can effectively operate in the normal university environment. For example, and undergraduate pursuing a career at the elementary school level normally takes all his work in the College of Arts and Sciences during his freshman and sophomore years and one-half his work there during his last two years. This block could be allocated on the basis of performance criteria rather than course-time criteria.

The program model offers another alternative that appears to be more feasible at a major institution such as The Ohio State University. The possibility of history or sociology professors helping devise performance criteria appropriate for future teachers would open up lines of communication within the university as a whole. This would lead to greater flexibility and experimentation in the introduction of performance criteria based curriculum. For example, a university could offer alternative routes to a degree, one based on performance criteria. The possibility that students majoring in education could satisfy certain criteria either by courses or by other experiences could be explored. Both of these would be feasible at a major institution such as The Ohio State University.

One of the more promising approaches to education offered by the program model is the system point of view. The ideas expressed by the General System Theory present an exciting and challenging view of education in our society. While the language of systems theory is, of necessity, precise and formal, such an approach can breathe life into teacher education and make it open, expanding, and stimulating. To accomplish a large training program, systems analysis provides a comprehensive method of organizing objectives.

What seems to be the major problem of implementation of a program model at a large institution such as The Ohio State University is the relationship between the College of Education and other areas of the university, particularly the College of Arts and Sciences. A degree of cooperation must be explored between these faculties and colleges within the university complex.

RELATIONSHIP TO RECOMMENDED STANDARDS IN TEACHER EDUCATION (NCATE)

An attempt will be made to analyze the program model in relationship to the recommended NCATE Standards (National Council for Accreditation of Teacher Education). Each standard in Part I will be listed and a brief analysis will be given when applicable to the program model.

> Standard: Teacher education curricula are based on objectives reflecting the institution's conception of the teacher's role, and are organized to include general studies, content for the teaching specialty, humanistic and behavioral studies, teaching and learning theory with laboratory and clinical experience, and practicum.

The basic assumption of the program model complies with this standard. The program model is based on performance criteria objectives reflecting the institution's analysis of the teacher's role in a changing society. The program model postulates that performance criteria be written in the following areas: human relations, behavioral studies, aesthetics, language arts, social studies, science, mathematics, foreign languages, pre-school, evaluation skills, media, and supervision.

> Standard: There is a planned general studies component requiring that at least one-third of each curriculum for prospective teachers consist of studies in the symbolics of information, natural and behavioral sciences, and humanities.

The standard "symbolics of information" is met adequately by the breadth or scope offered in the program. The program model does not address itself to the quantitative aspects of the standard. Individualized instruction, student evaluation and assessment, selection of content for the performance criterion, and certification requirements would be met by the program model.

> Standard: The professional studies component of each curriculum for prospective teachers includes the study of the content to be taught to pupils; and the supplementary knowledge, from the subject matter of the teaching specialty and from allied fields, that is needed by the teacher for perspective and flexibility in teaching.

Teaching specialty as used in this standard includes elementary education. The program model would adequately meet this standard. Provisions are made throughout the program model for the trainees to study, analyze, and experiment with their own life style in relationship to teaching. The classroom or other learning experiences would serve as the vehicle to provide the trainee this opportunity. Behavioral objectives would be specified to guide this learning activity.

> Standard: The professional studies component of each curriculum for prospective teachers includes instruction in the humanistic studies and the behavioral studies.

One strong assumption of the program model is that all behavior occurs in a human relations framework. Therefore, the basic underlying behaviors asserted by the program model are in the context of human relations and behavioral relations.

> Standard: The professional studies component of each curriculum includes the systematic study of teaching and learning theory with appropriate laboratory and clinical experience.

The program model postulates that throughout the trainees' encounter with properly sequenced performance components, they will be provided adequate opportunities to study systematically the art of teaching and experiment with different learning theories.

> Standard: The professional studies component of each curriculum for prospective teachers includes direct substantial participation in teaching over an extended period of time under the supervision of qualified personnel from the institution and the cooperating school.

No explicit relationships are outlined in the program model. The program model includes in the differentiated levels of responsibility the following steps: teacher intern, associate teacher, staff teacher, senior teacher, master teacher. The teaching intern would be placed in a controlled, observable situation. The preservice-inservice continuum of performance criteria is a unique application of this standard.

> Standard: In planning and developing curricula for teacher education, the institution gives due consideration to guidelines for teacher preparation developed by national learned societies and professional associations.

The program model represents a concerted attempt to face head-on the challenges of change, social relevance, and individualized instruction within the framework of the teacher education program. It was pointed out in the general system application of the program model that information inputs are sorted and classified by specific components of the environments into actual problems of performance by the system. Routine environmental scanning becomes a function to provide information for decision making andproblem solving in the system.

> Standard: The design, approval, and continuous evaluation and development of teacher education programs are the primary responsibility of an officially designated unit; the majority of the membership of this unit is composed of faculty and/or staff members who are significantly involved in teacher education.

The program model does not offer specific administrative positions or functions to accomplish this task. The program model is organized into systems components of Control Subsystem, Administrative Subsystem, Information Subsystem, Placement Subsystem, Educator Subsystem, and Analysis Subsystem which fulfill this requirement adequately.

> Standard: An institution engaged in preparing teachers has full-time faculty members in teacher education, each with post-master's degree preparation and/or demonstrated scholarly competence, and each with appropriate specializations. Such specializations make possible competent instruction in the humanistic and behavioral studies, in teaching and learning theory, and in the methods of teaching in each of the specialties for which the institution prepares teachers. There are appropriate specializations to ensure competent supervision of laboratory, clinical, and practicum experiences.

The program model does not attempt to analyze the existing staff at the University of Massachusetts to determine whether it meets this standard in the proposed program model. Implicit in the program model is the notion that these relationships would be crucial for the system to operate in a minimal environment. To accomplish this minimal environment, the inputs into the system would be analyzed by components of the system and transformed into performance objectives. These objectives would be stated to accomplish this function. Properly certified and trained faculty members are crucial to the accomplishment of these functions.

> Standard: Members of the teacher education faculty have continuing association and involvement with elementary and secondary schools.

Because the inservice-preservice continuum of performance criteria is implicit in the program model, this standard would be met.

Standard: The institution applies specific criteria for admission to teacher education programs; these criteria require the use of both objective and subjective data.

The program model does not list quantitative or qualitative standards for admission to the teacher program. The program model makes provisions for student evaluation and guidance. When a teacher trainee first enters the system he brings with him certain historical data as well as letters of evaluation and recommendations from previous institutions.

Standard: The institution applies specific criteria for the retention of candidates in basic programs who possess academic competencies and personal characteristics appropriate to the requirement of teaching.

The program model is based upon the successful completion of a performance criteria based curriculum. Assessment of student achievement is based upon the performance criteria selected by the student and his faculty representative in each criterion selected. The program model does not indicate how the grading or assessing is accomplished or what symbols are used in this process.

Standard: The institution has representative student participation in the evaluation and development of its teacher education programs.

The program model does not spell out specific avenues for student participation in decision making.

Standard: The library is adequate to support the instruction, research, and services pertinent to each teacher education program.

The program model does not relate any program requirement to facilities. The program model did not indicate if the present facilities at the University of Masschusetts were adequate to execute the program model.

Standard: A materials and instructional media center for teacher education is maintained either as a part of the library, or as one or more separate units, and is adequate to support the teacher education programs.

The program model does not provide any specifications of existing facilities or planned facilities to adequately execute the program model.

Standard: The institution conducts a well-defined plan for evaluating the teachers it prepares.

In the proposed program model the Analysis Subsystem is designed to operate as the control mechanism external to the program, gathering and feeding back information to the system concerning the quality and quantity of system input. The specific data analysis instruments are elaborated in the program model.

Standard: The institution used the evaluation results in the study, development, and improvement of its teacher education program.

The program model stresses that planned organizational decision-making is a vehicle to enable maximum creativity while keeping the total system clearly in mind. Measurement-evaluation-feedback is a way of keeping score on the total system.

Standard: The institution has plans for the long-range development of teacher education; these plans are part of a design for total institutional development.

The program model incorporates development and long-range planning as part of an organized system functioning in a systems context. The program model rests on the assumption that as this program model is operationalized, the entire profession will find the boldness to rush toward a future which it currently seems to fear.

THE MICHIGAN STATE UNIVERSITY PROGRAM MODEL

Analysis by Barbara Stoodt

RATIONALE

The Michigan State University program model is based in part upon a desire to professionalize education. It is assumed that regularizing the behavior of teachers will be a step in the direction of professionalizing education. The variable nature of problems with which a professional teacher deals require procedures that can be employed systematically.

Procedures that can be employed systematically by teachers are specified in the teacher preparation program model as Clinical Behavior Style. It is assumed that teachers so prepared will be able to provide professional service to students in order to produce some intended change and some learning from experience.

The concept Clinical Behavior Style is intended to convey the following meaning: that teachers describe, analyze, hypothesize, prescribe, treat and observe consequences. Every clinical experience is characterized by at least three distinct elements: client relatedness that includes direct or indirect experience with pupils, manipulation of instructional variables, and the utilization of feedback. Two assumptions are basic to this rationale:

1. That a teacher who has been trained to manifest a Clinical Behavior Style will be better able than a teacher not so trained to establish a career of self-renewal and improvement as a teacher.

2. That most teacher trainees can be taught to operate with a more or less sophisticated model of clinical behavior.

Clinical Behavior Style is supported as a basic assumption by the "learning from experience" segment of current teacher education programs. "Learning from experience" is considered one of the most valid parts of teacher education by both teacher and layman. Clinical Behavior Style denotes the behaviors and mental processes of a teacher who has been trained to utilize his student related experience as a means of continued learning and skill development.

Development of Clinical Behavior Style leads to the application of theory to practice. This concept is supported by Vollmer and Mills in the book, Professionalization. Cogan also explores this idea in the article, "Toward a Definition of Profession," in the Harvard Educational Review.

A second source of support for the Michigan State University program comes from the Behavioral Sciences. The professional foundations of the program have been centered on the Behavioral Sciences for two reasons:

1. The dominant task of all educational activity is to develop pupil behavior within various settings. The Behavioral Sciences provide the systems of knowledge and inquiry most related to this task.

2. A distinctive feature of empirical science as a way of acquiring knowledge is that it is self-corrective.

This aspect of the rationale is supported by the belief **that** teachers who are trained in the modes of inquiry and have mastered the content of the Behavioral Sciences will be sensitive to the relevancy of education to the needs of youth in contemporary society. Behavioral Science contributes a global view of human affairs and incorporates information, skills, and procedures that are related to understanding mankind. When teaching is viewed as a set of human behaviors, it becomes comprehensible through the study techniques of Behavioral Science.

The term Behavioral Science is eclectic in that it cuts across a variety of established disciplines to denote those aspects that contribute basic empirical knowledge about the activities of men. Some of the disciplines that are of special interest to the Behavioral Scientist are: psychology, sociology, anthropology, political science, economics, and various subdisciplines such as cognitive development, psychology of learning, social psychology, cultural anthropology, and linguistics.

The anticipated effects of a behavioral context for teacher education are:

1. Capitalizing on the tendency of teachers to teach as they were taught; the behavioral context of the program is expected to increase the teacher's ability to make content choices in terms of behavioral relevance.

2. The behavioral context in the liberal arts is expected to give the teacher a sensitivity to the relevance of the arts, philosophy, and history to the better understanding of self and others.

3. The emphasis on behavioral context is expected to teach the teacher to identify and relate content to contemporary and personal issues.

4. The behavioral context of the study of teaching is expected to establish in the teacher a more analytical and rational approach to instructional tasks.

Inclusion of a liberal or general education with specialized education in a particular discipline or small set of disciplines in teacher preparation programs has been recommended by many scholars. Conant recommended this in The Education of American Teachers, and Smith agreed in Teacher Education: A Reappraisal. Ianni points out that, "The problem of education is the problem of culture and the problem of culture can be approached only through one study of man--a study we have described as the behavioral sciences."[1]

COMPONENTS

The model program is based on two assumptions: Clinical Behavior Style and Behavioral Science. They are supported by the five major components of the program. The components are: General-Liberal Education, Scholarly Modes of Knowledge, Professional Use of Knowledge, Human Learning, and Clinical Experience.

General-Liberal Education is designed to foster individual fulfillment and to prepare citizens for participation in our democratic society. The area is divided into three sub-areas: humanities, social science, and natural science. The rationale supporting this component is that a basic core of General-Liberal Education experiences must emphasize the contribution the various disciplines of liberal arts and sciences make to an understanding of man, his behavior, his ideas, his society, and his world.

The General-Liberal Education component is designed to provide the content necessary to the Behavioral Science assumptions upon which the program is based. Students are introduced to this content through the basic areas of this component. The student is introduced to questions of value in the humanities area. The social science area introduces the student to the nature of the social science disciplines including: geography, anthropology, sociology, political science, and economics. The central theme of the natural science area is the effect of the natural sciences and mathematics upon our culture.

---

[1] Francis A. J. Ianni, Culture, System, and Behavior: The Behavioral Sciences, and Education. Chicago: Science Research Associates, Inc., 1967, p. 16-18.

The Scholarly Modes of Knowledge component provides content that is more directly applicable to teaching in the elementary school. The modes or styles of inquiry of scholars are stressed. This component was designed to follow and dovetail with the General-Liberal Education component. Content of this component includes social science, natural science, mathematics, fine arts, linguistics, communication, and literature for children. The Scholarly Modes of Knowledge component is supported by the rationale that such study opens the door to disciplined inquiry into those areas related to the elementary school curriculum.

Methods of inquiry applicable to the Behavioral Science assumption upon which the program model is based are emphasized in this component. As students study the Scholarly Modes of Knowledge their attention is drawn to the underlying structures pervading each discipline and the problem-solving techniques employed by scholars.

The Professional Use of Knowledge component builds upon the General-Liberal Education component and the Study of Human Learning component; it integrates the work done in the Scholarly Modes of Knowledge component. This component is comprised of reading, language arts, social studies, science, and mathematics.

This component provides an opportunity for the prospective teacher to integrate what he knows about various disciplines with what he knows about learning, and to translate this knowledge into instructional strategies. He studies and identifies variables thatmust be considered in designing instructional strategies.

Experiences provided in the Professional Use of Knowledge component develop the processes of analysis, hypothesizing, prescribing, treating, and observing consequences, which are introduced in the Clinical Behavior Style assumptions. The prospective teacher also has an opportunity to develop the elements of client relatedness, manipulation of instructional variables, and utilization of feedback that are aspects of Clinical Behavior Style.

The Study of Human Learning component is concerned with exploring human capacity for learning, understanding environmental systems, and inquiring into cognitive development. Aspects of this component are: behavioral science research based study of the growth and development of the pre-school child; behavioral science research based study focused upon educational psychology; behavioral science study focused upon social philosophical foundations of education; advanced behavioral science research based study focused upon educational psychology; and advanced behavioral science study in social-philosophical foundations of education.

This component focuses on the learner and the daily cognitive affective forces and experiences likely to influence his behavior both inside and outside of school. Analytic tools for studying human behavior drawn from the Behavioral Sciences are used to study the learner. The prospective teacher uses the modes of inquiry and research data to develop greater understanding of human learning.

The content of the Study of Human Learning component cuts across traditional academic discipline boundaries of Behavioral Science research. The modes of inquiry and the content are basic to the Behavioral Science assumptions of the program model. The content presented also develops understanding of the teaching-learning process; and such understandings are basic to development of Clinical Behavior Style.

The Clinical Experiences component provides experiences that are client related and that include manipulation of instructional variables, and the element of feedback so that improvement of instruction occurs. The component includes four phases: the career decision seminar, clinical experiences, interpersonal process phase, and field experiences. The rationale for this component is supported by experience, evaluation, and experimental work that was completed at Michigan State University.

A Clinic School Network is developed in this program model to provide a setting for clinical experiences. This cooperative university-school system network integrates the resources of all agencies concerned with teacher education in order to facilitate both pre-service and in-service education.

Through the four phases of Clinical Experience students develop an understanding of the elements of the Clinical Behavior Style of Teaching. Students have an opportunity to relate theory to practice while working in the Clinic School Network. They have an opportunity to use the processes of Clinical Behavior Style in their clinical work.

In summary, the Professional Uses of Knowledge component, the Human Learning component, and the Clinical Experiences component provide an opportunity for the student to develop the basic activities of analyzing, hypothesizing, prescribing, treating, and observing consequences that are specified in the Clinical Behavior Style rationale. Students also experience situations that require client relatedness, manipulation of instructional variables, and utilization of feedback in these components. These elements are basic to the Clinical Behavior Style rationale. The Behavioral Science rationale is supported by the General-Liberal Education component, which provides content, while the Scholarly Modes of Knowledge component and the Human Learning Component provide study of the modes of inquiry. The five components of the program model support the basic assumptions of Clinical Behavior Style and Behavioral Science, thus providing philosophical consistency in the program.

OUTCOMES

The anticipated outcomes of this program are:

1. A new kind of elementary school teacher for the nation's schools--one who is a well educated person and who:
    a. Engages in teaching as clinical practice
    b. Is an effective student of human learning, its environmental characteristics
    c. Assumes the role of a responsible agent of social change
2. A systematic introduction of research and clinical experience into the decision-making process as a basis for continued educational improvement.
3. A new kind of laboratory and clinical basis for undergraduate and in-service teacher education programs.

Supporting rationale for these outcomes is found in the following statements. A well educated person is sensitive to the relevancy of education to the needs of youth in contemporary society. The Behavioral Science rationale provides a global view of human affairs and incorporates information, skills, and procedures that are related to understanding mankind.

The variable nature of the problems with which a professional teacher deals creates the need for Clinical Behavior Style. The teacher must be a student of human learning due to increasing urbanization in American society and a changing cultural orientation. These factors make experience in using the tools of inquiry important assets to teachers.

Teacher decision-making cannot be improved until decisions and their supporting rationales are made explicit. A Clinical Behavior Style of teaching involves explicitly making decisions so that they can be related to existing bodies of relevant knowledge to build self-correcting practices. Research and clinical experience provide the relevant knowledge necessary to improve decision-making.

Another belief that influenced the development of this program is that a trainee should be exposed to the kind of professional teaching behavior he is expected to attain, since teachers tend to teach as they have been taught. The teacher preparation program must itself be a model of creative teaching, continual critical self-evaluation, disciplined inquiry and exploration, rational innovation, and professional cooperation among various disciplines and specialties.

The substantive, behavioral, and environmental dimensions of teaching behavior are presented as a part of the Clinical Experiences component. These dimensions of teacher behavior are the outcome of studies of the tasks of teaching, carried on for some years in the elementary schools that participate in the Michigan State University teacher education program.

INSTRUCTIONAL TECHNIQUES AND PROCESSES

Instruction is organized around self-contained curriculum units or modules. The elements in each module are: objectives, prerequisites, experience necessary to achieve objectives, setting, materials, level, hours required, and evaluation. The instructional modules of this program utilize a variety of instructional techniques and processes including: reading, lecture, discussion, films, laboratory experiences, observation, analysis, interpersonal process reca-l, auto-tutorial experiences, simulated experiences, demonstrations, directed independent study, and clinical experiences. The clinical experiences suggested include tutorial, career decision seminar, anlaytical study of teaching, team teaching, and internship. Video-taping is used to record some of the clinical experiences in the program for further analysis.

Lectures are supported as a vehicle for providing a common body of knowledge for students. Small discussion groups, films, and assigned papers are designed to improve student skills in communication, comprehension, and as a means of individualizing instruction. Seminars are introduced to provide flexibility in the program. Laboratories are designed to facilitate learning of procedures rather than merely following directions.

The technique of interpersonal process recall is based upon video-taping, which permits an individual to analyze previous interaction with another person. The rationale supporting this procedure is the need to provide more accurate means of interpreting behavior.

The clinical experiences of the program constitute a plan for systematic development from student to teacher. For example, microteaching provides prospective student teachers with a substantial amount of controlled and directed teaching practice preceding their entrance into student teaching.

According to the Michigan State University program, simulated experiences require precise control of the presentation of problems and feedback. In simulated experiences the behavior of the trainee is no less real, but the data upon which he acts and the responses that his activity elicit are more clearly defined than in "real life." Simulation in professional training has the following major advantages:

1. Allows for a more sequentially ordered progression of problems.
2. Assures that certain critical problems will be encountered--whereas they might not appear during unpredictable field experiences.
3. Provides repeated problem confrontation where specific feedback can establish the desired behavior in the trainee.
4. Provides the same experiences for a group of trainees in order to establish a common base for discussion and evaluation.
5. Allows the design of feedback to the trainee to be based upon probabilities representative of larger samples.

ROLE OF THE TEACHER EDUCATOR

The role of the teacher educator varies widely due to the variety of instructional techniques and the component area being taught. The teacher educator lectures to large groups, leads small group seminars, confers with individuals, and serves as an interrogator or counselor in the interpersonal process recall. In some situations the teacher educator assumes a non-directive role, and is, in effect, an organizer, a facilitator. Counseling skills are required by the career decision seminar. The teacher educator utilizes a variety of technology including video and audio taping, film, slides, overhead projection.

The teacher educator participates in curriculum development through developing instructional modules. He must formulate objectives, prerequisites, experience necessary to achieve objectives, setting, materials, level, hours required, and evaluation. The teacher educator also must organize the scope and sequence of the instructional modules. He may work with the clinic-school network providing in-service education for teachers through resourced teaching and analytical study of teaching.

EVALUATION TECHNIQUES

The evaluation subsystem of the program engages in general systems evaluation activities that include the following:

1. Developing new assessment and appraisal techniques
2. Assisting in continuous objective development through providing counsel to concerned personnel on the capacity to evaluate behavioral objectives

3. Collaborating with ancillary research resources to improve design techniques

4. Evaluating the achievement of stated subsystem objectives

5. Designing data gathering instruments for recording student input characteristics and output behaviors

6. Developing, with Management-Planning and Information Retrieval subsystems, means for transmitting findings from one program or subsystem into the recycling plans of other programs and subsystems

7. Designing means for gathering baseline data

8. Designing systems for the collection and display of longitudinal data

9. Recommending to the Planning Board new thrusts in research

10. Designing means to assess the explicit behaviors, as well as the attitudes and values of students

11. Providing descriptive and research data on such persons with the Behavioral Science Teacher Education Program as:

    a. the trainee

    b. the on-campus faculty

    c. the clinical professor

    d. local school district personnel

    e. pupils taught by the trainee

12. Evaluating the effectiveness of instructional modules of all kinds in meeting stated objectives

The evaluation activities are based upon a rationale that includes two major points. The first point is that evaluation suggests a consideration and re-examination of values. The value system of any individual or group will dictate the behavior of that individual or group. Although little is known about the value system of individuals or groups by direct, empirical measurement of these values, work in assessing values and their relationship to performance must continue. Evaluation can play a major role by simply calling attention to some of the inferences and value judgments that may be implicit in the statements of objectives made by one or more of the components.

A second major point of the rationale is that a major effort of evaluation is to mobilize the instruments and analytical techniques of the behavioral sciences in order to observe, measure, and assess the overt actions of individuals or groups. These assessments permit us to draw inferences about a person's values, which are implied by his behavior.

Evaluation procedures are also suggested for each module. These evaluation procedures are related to the specific objective of that module. The procedures vary widely, and include participation in discussion to be evaluated by the discussion leader, listing specific items, written examinations, performance of specific material, definition of terms, solution of problems, and a standard course examination. In some modules evaluation is simply a decision of the instructor.

RESPONSIVENESS TO SOCIETAL AND PROFESSIONAL NEEDS

The program provides training for teachers of preschool children, primary grade children, and middle school children. The teacher educated in this program is prepared to be a member of a team of educators who direct the instruction of children. Teachers are offered the opportunity to become specialists in a variety of disciplines such as reading, language, art, science, mathematics, and social science. A plan for educating Educational Media Specialists is included. Provision is made for the education of associate teachers who serve as paraprofessionals in a team teaching situation.

Cross-cultural studies are woven into the fabric of the program in order to sensitize prospective and in-service teachers to unfamiliar cultures and to enable them to recognize and appreciate the varying attitudes assumed by people of other cultures. Prospective teachers are provided opportunity for experience in a variety of school settings. Because of the emphasis on situation analysis, prospective teachers can understand many types of communities in addition to the currently emphasized "inner city" and "suburbia."

Modern technology is harnessed within a sound theoretical framework of teacher education. Students learn to use technology as a means of achieving educational objectives.

A clinic-school network as described in this model, marshals and integrates the resources of all agencies concerned with teacher education and thus provides the ideal setting to maintain professional currency and develop teacher capabilities. Activities such as resourced teaching, core experience, and analytical study of teaching provide in-service education for teachers. The clinic-school network creates a professional environment where dialogue between university, school district, and educational agency personnel can focus on improving curricular and methodological theory and practice, school district operation, teacher preparation and development.

The planning board and advisory boards organized in this program provide for student representation, thus permitting students a voice in their education.

UNIQUE CONTRIBUTIONS

The teacher preparation program described in this report emphasizes four unique characteristics:

1. A broad base in the behavioral sciences
2. Developmental clinical experiences beginning in the freshman year and including a full year of internship
3. New approaches to organization, content, and emphasis
4. An interrelated and self-generating system of evaluation, program development, and management

MODEL REVISION

The clinic-school network creates a professional environment wherein dialogue between university, school district, and educational agency personnel can focus on improving curricular and methodological theory and practice, school district operation, and teacher preparation.

The emphasis in this program model is on planning. Planning by its very nature is a leadership function that continually forces an organization to examine its operations and to seek alternatives that hold higher promise for objective fulfillment. As conceived, the Behavioral Science Teacher Education Program subsystems would be "administered" by administrative assistants responsible to the subsystem director. Their responsibility would be the maintenance of the program once it was planned and operational. Secondly, they would be responsible for adopting subsystem operations when planning activities indicated that changes were required to improve program operations.

The planning board is a particularly significant decision-making body. The project director and directors of each subsystem comprise the planning board. The planning board develops general policies, establishes a priority among the general objectives of the program, allocates resources so that each subsystem can carry out its task effectively, and resolves conflicts thatmight arise among subsystem operations.

There are three advisory boards. Each of the three advisory boards is placed at a carefully determined point in the organization ot facilitate the responsiveness of the program to real world problems. As a result, the entire system is designed to react quickly and appropriately to external imperatives that affect teacher education. These advisory boards are: The Project Advisory Board, The Clinical Experience Advisory Board, and The Planning Development Advisory Board.

RELATIONSHIP TO GENERAL EDUCATION

The program model is closely related to the liberal arts through the emphasis on the content and modes of inquiry of the Behavioral Sciences. The program relies heavily on the liberal arts to give the teacher a sensitivity to the relevance of the arts, philosophy, and history to the better understanding of self and others. The broad basic core of general-liberal education is designed to foster individual fulfillment and to prepare citizens for participation in our democratic society.

Rather than providing a series of survey courses, this model proposes a basic core of general-liberal education experiences that emphasize the contributions the liberal arts and science make to an understanding of man, his ideas, his society, and his world. The intent is to help prospective teachers develop the basic analytical skills thatare prerequisite to making intelligent decisions about current societal problems. Provision is made for students to become active participants in formulating relevant educational structures that bridge personal experience and curriculum content.

This model program is a product of the seven colleges within Michigan State University rather than a product of the College of Education alone. A Project Advisory Committee, representing participating colleges and varying educational perspectives, advised the project staff on several occasions. Members of writing teams were drawn from academic departments throughout Michigan State University, other universities, several school districts, and a number of allied educational agencies.

FEASIBILITY

An extensive and flexible management system is necessary to support a complex enterprise such as that described. Five subsystems are included in the management system: Program Development, Clinical Experience, Evaluation, Information Retrieval, and Management Planning. The operation of these five subsystems would require additional personnel, equipment, and office space.

The Planning Board and Advisory Boards are basic to this program. These boards provide an opportunity for all related personnel to participate in program development, revision, and evaluation. Through these boards the program is made sensitive to societal needs. Personnel serving on these boards would be required to make an additional contribution of time and responsibility.

A clinic-school network is basic to the development of this program. The clinic-school network provides a laboratory for teacher training, a vehicle for in-service education, and a source of input to keep the teacher education program current.

The instructional modules for this program are organized so that they could be adapted to institutions regardless of their organization in quarters or semesters. All modules, a group of modules, or individual modules could be utilized by an adopting institution. However, these instructional modules reflect philosophical stances that might not be in harmony with the adopting institution.

Instructional procedures and processes utilized in the modules may differ for an adopting institution, and adoption would require in-service education for teacher educators. The technology utilized for instruction would have to be acquired and users educated to this technology. Because instruction is arranged for small groups, large groups, and individuals, flexible physical facilities are required.

This program is comprehensive, including changed organization, curriculum, and instruction in the liberal arts, as well as in education. These changes would require close cooperation between liberal arts departments and education departments.

RELATIONSHIP TO RECOMMENDED STANDARDS IN TEACHER EDUCATION (NCATE)

> Standard: Teacher education curricula are based on objectives reflecting the institution's conception of the teacher's role, adn are organized to include general studies, content for the teaching specialty, humanistic and behavioral studies, teaching and learning theory with laboratory and clinical experience and practicum.

The Clinical Behavior Style aspect of this program incorporates objectives that reflect the institution's conception of the processes required by the teacher's role. The clinical component of this provides study of teacher behaviors that are the outcome of studies of teaching tasks carried on for some years in the elementary schools participating in the Michigan State University teacher education program.

The Behavioral Science aspect of the program is concerned with the teacher's value system and affective biases, in terms of the impact of these variables upon his teaching behaviors, which in turn affect learners. The teacher's value system is developed through the General-Liberal Education component which provides a broad basic core of education in the liberal arts, humanistic and behavioral studies.

Program differentiation and specialization for teacher training occurs along two dimensions: (1) the amount and area of subject specialization and (2) the age of the pupils to be taught.

Teaching and learning theory are developed in the Professional Use of Knowledge and the Human Learning components of this program. Theory is related to practice in the Clinical Experiences component that provides laboratory, clinical experience, and practicum for the use of teaching and learning theory.

> Standard: There is a planned general studies component requiring that at least one-third of each curriculum for prospective teachers consist of studies in the symbolics of information, natural and behavioral sciences, and humanities.

The General-Liberal Education component of this program has three sub-areas: humanities, social science, and natural science. The Scholarly Modes of Knowledge component is composed of social science, natural science, mathematics, fine arts, linguistics, communication, and literature for children. A series of instructional modules is organized around each of these areas. The effectiveness of individual modules in achieving stated objectives is evaluated through the evaluation subsystem.

Each student preparing to be a general classroom teacher studies the areas of General-Liberal Education, Human Learning, Tutorial Experiences, Career Decision Seminar, Reading (Professional Use of Knowledge), and Communication Seminar. The subject specialist studies the previously listed courses and in addition engages in depth study of two subject areas.

An effort is made to collect all information about the student that will be responsive to participation in the university program; such information is stored in the information storage and retrieval system. This information is related to the prerequisites that specify the "input" conditions that should be established before the given module is initiated. This helps to determine the courses of study best suited to the student's needs. The modular approach has the value of multiple path programing to provide for the specific needs of different trainees.

> Standard: The professional studies component of each curriculum for prospective teachers includes the study of the content to be taught to pupils and the supplementary knowledge, from the subject matter of the teaching specialty and from allied fields, that is needed by the teacher for perspective and flexibility in teaching.

The Professional Use of Knowledge component provides study of the content to be taught to pupils while the Scholarly Modes of Knowledge component is designed to aid the prospective elementary teacher bridge the generation and knowledge gap in certain significant areas.

The program model is the product of an effort made by seven colleges of Michigan State University. The colleges represented are: the College of Arts and Letters, Communication Arts, Social Science, Natural Science, Home Economics, and the University College. Teams of educators and scholars in the natural sciences, social sciences, and humanities worked closely together to integrate the program. These factors work together to insure that the curriculum embodies the judgment of the teacher education faculty and the members of the faculty in the teaching specialty concerned. Representatives of the disciplines and representatives of education work together on the advisory boards and the planning board in an effort to keep the program current.

Standard: The professional studies component of each curriculum for prospective teachers includes instruction in the humanistic studies and the behavioral studies.

The Human Learning component has five sub-areas that address the humanistic and behavioral studies as they relate to education. The five sub-areas are: behavioral science research based study of the growth and development of the pre-school child; behavioral science research based study focused upon educational psychology; behavioral science study focused upon social-philosophical foundations of education; advanced behavioral science research based study focused upon educational psychology; advanced behavioral science study in socio-philosophical foundations of education. The content and teaching modules of this component have the following rationale:

1. The material must provide a basis for an understanding of all human learning.
2. The material must provide the basis for an understanding of the significant conditions, forces, or factors that stimulate, inhibit, or affect human learning in any way.
3. The material must enable us to make reasonably good predictions about the outcome of learning activity.
4. The material must be a potential source of hypotheses that can be tested in the classroom, as well as the laboratory, in order that our understanding of the teaching-learning process may continue to develop and grow.
5. The content outlines must reflect more than a single point of view by cutting across the traditional academic discipline boundaries of behavioral science research.

This component focuses on the learner and the daily cognitive-affective forces likely to influence his behavior both inside and outside of school. Analytic tools for studying human behavior, drawn from the behavioral sciences, furnish a cornerstone for the program and are integral to this component. Through more sophisticated use of these modes of inquiry and through a better understanding of the research in this area, the prospective and practicing teacher becomes more effective.

This component of the model program is studied by both the general classroom teacher and the subject specialist.

> Standard. The professional studies component of each curriculum includes the systematic study of teaching and learning theory with appropriate laboratory and clinical experiences.

The Professional Use of Knowledge component, the Human Learning component, and the Clinical and Field Experience component provide study of teaching and learning theory as well as analytical study of teaching. Teaching and learning theory is applied to practice during the clinical experiences that each student has beginning in the freshman year and including a full year of internship.

Year one provides the Career Decision seminar, which includes tutorial experiences, assisting teaching, and experiences with children. Year two includes field experiences for community understanding. The clinical sequence and simulation laboratory occur between year two and three. Year three includes pre-internship practicum, visiting practicum, and teamed field experiences. The internship is scheduled for year four, and takes place in the clinic-school network under the supervision of an intern consultant. The internship provides the opportunity to translate the study of human behavior into strategies of instruction.

> Standard: The professional studies component of each curriculum for prospective teachers includes direct substantial participation in teaching over an extended period of time under the supervision of qualified personnel from the institution and the cooperating school.

Students in this program are assigned to full-time internship in an elementary classroom for an academic year under the guidance of an intern consultant. This phase of the program is characterized by student autonomy and responsibility for classroom activities with assistance from university and school district resources.

A unique cooperative school district-university fiscal arrangement is set up for the internship staff. In this plan five interns are assigned to five elementary teaching stations under the direction of an intern consultant. This plan utilizes a university coordinator as a link to the university.

> Standard: In planning and developing curricula for teacher education, the institution gives due consideration to guidelines for teacher preparation developed by national learned societies and professional associations.

The American Association of Colleges for Teacher Preparation publication, Conceptual Models in Teacher Education: An Approach to Teaching and Learning, by John R. Verduin, was used as a reference in developing the Clinical Behavior Style rationale of the program model.

References such as the following were used in developing the program for instructional associate preparation: Auxiliary School Personnel by the National Commission on Teacher Education and Professional Standards; New Careers and Roles in the American School by Bowman and Klop; and Guidelines for the Design of New Careers by Fine.

> Standard: The design, approval, and continuous evaluation and development of teacher education programs are the primary responsibility of an officially designated unit; the majority of the membership of this unit is composed of faculty and/or staff members who are significantly involved in teacher education.

As conceived the program subsystems would be administered by administrative assistants responsible to the subsystem director. Their responsibility would be to maintain the program operations once they were planned and initiated. Secondly, they would be responsible for adopting subsystem operations when planning activities indicated that changes were required to improve program operations.

The planning board is a particularly significant decision-making body. The project director and director of each subsystem comprise the planning board. The planning board develops general policies, establishes a priority among the general objectives of the program, allocates resources so that each subsystem can carry out its tasks effectively, and resolves conflicts that might arise among subsystem operations.

There are three advisory boards. Each of the three advisory boards is placed at a carefully determined point in the organization to facilitate the responsiveness of the program to world problems. As a result, the entire system is designed to be able to react quickly and appropriately to external imperatives that have impact on teacher education.

The Project Advisory Board might include representatives from such groups as the State Department of Education, selected intermediate offices, state educational associations, Dean of the College of Education, clinical teachers, clinical student teachers, pre-clinical students, local school district officials, representatives from other colleges within the university, and other significant groups. This board would make recommendations with respect to the entire project.

The Clinical Experience Advisory Board will be composed of representatives from such groups as clinical supervisors, students in residence, local school officials, supervising teachers, and others. It will be the responsibility of this board to advise the director of the Clinical Experience subsystem on matters relating to the increased effectiveness of this subsystem.

A Planning Development Advisory Board will be composed of representatives from such groups as people who have completed their student teaching, clinic teachers, students preparing for student teaching, a representative from the State Department of Education, and the Director of the Program Development subsystem.

Standard: The institution has a well-defined plan for counseling and advising students in teacher education.

The Career Decision seminar provides counseling and advising to the prospective teacher. Counseling and guidance continue to be provided to the student as he moves through the Clinical Behavior component of the program. For example, as an intern he receives guidance and advice from the intern consultant.

The information retrieval system provides information to those who counsel the student. The following types of information are available: student progress report (anecdotal form), student progress report (test scores and grades), and student reactions to experiences, normative information, progress charts for students, and a profile of student progress.

Standard: The institution has representative student participation in the evaluation and development of its teacher education program.

Students are represented on the Project Advisory Board, the Clinical Experience Advisory Board, and the Planning Development Advisory Board. These boards are responsible for advising the Planning Board with regard to planning, evaluation, and revision of the program model.

Standard: The institution conducts a well-defined plan for evaluating the teacher it prepares.

Through the clinic-school network the program has provided maximum sensitivity to the growth and need patterns of the individual teacher, and provides an optimal environment for systematic research regarding these patterns.

The evaluation subsystem provides descriptive and research data on persons such as: (a) the trainee, (b) the on-campus faculty, (c) the clinical professor, (d) local school district personnel, (e) pupils taught by the trainee. It also evaluates the effectiveness of instructional modules of all kinds in meeting stated objectives.

Standard: The institution uses the evaluation results in the study, development, and improvement of its teacher education programs.

This teacher education program model is designed for constant evaluation and feedback into the program. The clinic-school network serves as a laboratory in many settings, and a source of data for the study, development, and improvement of the program. Experienced teachers from the clinic-school network may return to college to work with undergraduates. Such regenerating through recycling is integral to the clinical approach emphasized in this model.

Data secured by the evaluation subsystem are used in making recommendations to the planning board.

Standard: The institution has plans for the long-range development of teacher education; these plans are part of a design for total institutional development.

This comprehensive program model was developed by a number of departments rather than by the department of education alone. Therefore, the total institution is influenced by the teacher education program. Many departments are represented on the planning board and advisory boards that function to facilitate the long-range development of the program. These organizations utilize information derived from the evaluation subsystem for program revision and development.

THE NORTHWEST EDUCATIONAL REGIONAL LABORATORY
(COMFIELD) PROGRAM MODEL

Analysis by Judith A. McMillen

RATIONALE

ComField is the elementary teacher education program model resulting from the joint efforts of a consortium of twenty-six colleges and universities, five State Departments of Education, and the Teaching Research Division of the Oregon State System of Higher Education. Because the planners were charged to develop a model of a teacher education program, this particular program model is one that can be applied in a variety of situations rather than being an operational program. In other words, ComField provides the framework within which the operational teacher education program than may be developed for a specific college or university setting.

The base for program model development consists of ten propositions agreed upon by the developers:

1. The objectives of a teacher education program should be specified in terms of the competencies needed by teachers to bring about the outcomes desired in pupils.

2. Overt behavior acceptable as evidence of given teaching competencies should be specified.

3. Systems design principles should be used in the development of instructional experiences to bring about mastery of teaching competencies.

4. There should be evidence that professional competencies are integrated into a unique and personal style, and a student should be able to be provided a rationale for the application of that style in any given situation.

5. The desired teaching competencies should be demonstrated under laboratory conditions prior to the assumption of supervised responsibility for the learning of children in the schools, and they should be demonstrated to criterion level under classroom conditions prior to assuming full responsibility.

6. The instructional experiences that lead to both the development and personalization of competencies should be individualized with respect to point of entry into the curriculum, pacing, sequencing, information processing preferences, etc.

7. Cost/benefit data should be provided on all aspects of such a program.

8. An adaptive mechanism should be developed to insure the continuous modification of such a program in light of evidence as to its cost, effectiveness, and appropriateness.

9. A computer based information management system should be used to effectively meet the frequent and diverse demands for information within such a program.

10. A model should be developed for the management of execution of such a program that insures as far as possible that it reach the objectives set for it.

Because some of the propositions related to instruction while others concerned management, two models--one for an instructional program and the other for a management support system--were developed.

The rationale for the instructional program model, which is set forth in a series of six instructional guidelines, was based upon systematic and logical analysis. That is to say, if one knows the pupil outcomes wanted and knows what it takes to get them, it should be possible to specify the competencies needed on the part of the teachers to bring about given outcomes, and it should be possible then to build a teacher education program that will lead to the development of these competencies. For lack of hard facts from education and psychology, however, portions of this systematic analysis must be based strictly upon collective wisdom.

The instructional guidelines, which are highly consistent with the first six propositions used as a base for the development, call for the use of systematic analysis in deriving the teacher education program, the use of behavioral objectives, and the use of systems design principles to develop learning experiences that lead to the mastery of teaching competencies. In addition, the guidelines state that provision should be made for individual differences in learning and for personalization of teaching competencies. The final instructional guideline concerns competency demonstration first under laboratory conditions and then under supervised classroom conditions before assuming full teaching responsibility.

The four management guidelines, which are based on the last four propositions, provide for a systematically designed management model to be developed for the application of the systems design principle of corrective feedback within each of the parts of the model as well as to the model as a whole. In addition, a computer based information management system is stipulated as well as the necessity for cost data.

COMPONENTS

The overall program model is made up of general education and professional education. The components of professional education are knowledge and performance.

The content specifications of the program model indicate four blocks of content to prepare the teacher (called an Instructional Manager) for his roles. Implicit in each block are knowledge and application. The first block leads to the development of instructional competencies. This content includes a taxonomy of pupil characteristics, instructional strategies, conceptual frameworks for teaching subject matter areas, and pupil outcomes.

Another block of content is derived from the noninstructional competencies required of the prospective Instructional Manager. These include ability to work on a team, to supervise assistants, to confer with parents, and to perform certain management functions.

The third block of content relates to the development of skills that enable the Instructional Manager to be more effective in his professional role. Being generally adaptive and interpersonal in nature, they include a more accurate perception of self and of one's relationship with others. The rationale for this block is that theimprovement of the socio-emotional environment results in more efficient intellectual activities and optimal learning conditions, as well as better mental health in general.

Provision for the personalization of all competencies is the purpose of the fourth block. The essentials in this process are the development of self-understanding, clarification of commitment to the various professional competencies to be mastered, and the integration of professional competencies into a personal style of teaching. This personalization block of content is a thread running through each of the other three blocks so that consideration of self-understanding, commitment, and teaching style is always present.

The program model is organized into three phases--foundations, laboratory, and practicum. The foundations phase provides the knowledge base for the laboratory and the practicum. The laboratory serves to implement the philosophy that students should demonstrate ability to effect the desired learning outcomes in children under simulated conditions before becoming responsible for performing under classroom conditions. The student must achieve criterion performance in the laboratory before he is permitted into the practicum. The practicum consists of demonstrating competencies to criterion performance under live classroom conditions.

Figure 1 is taken from the program model to show the relationships among the organizational phases of the program model and the four blocks of content.

OUTCOMES

The anticipated outcome of the program model is the development of an individualized teacher education program that will prepare an Instructional Manager for the 1970's. The planners made two predictions concerning education in the 1970's. First of all, the evolution of a functional science and technology of education will bring about a widespread use of self-instructional materials, and systems technology will be used to organize instructional experiences. This will result in the use of instructional systems in educating children. The second prediction foresees three kinds of educational specialists. The Instructional Analyst will be the team member responsible for identifying the pupil outcomes for which the school should be held accountable. The instructional Designer or Engineer will design the instructional systems to accomplish the outcomes, and the Instructional Manager will be charged with the responsibility for the instructional environment. The Instructional Manager may be considered a supervisor of the instructional process.

Although this may sound like a somewhat sterile and dehumanized description of the future school, the program model developers point out that possibly the distinctions among the three kinds of specialists will not be so sharp in actual operation, and it is conceivable that one person might even serve more than one of the functions.

GENERAL EDUCATION	PROFESSIONAL EDUCATION			
	Foundations-Laboratory Phase			Practicum Phase
Knowledge prerequisite to successful performance in the Foundations-Laboratory Phase of ComField	Mastery of repertoires of knowledge essential to the performance of the teaching act	Mastery of repertoires of knowledge dealing with the elements and strategies of the teaching act	Demonstration of competencies which bring about desired learning outcomes in children	Demonstration of competencies which bring about desired outcomes in children Demonstration of competencies which lead to the successful performance of non-instructional tasks
	Mastery of repertoires of knowledge essential to the performance of general adaptive and interpersonal skills		Demonstration of competence in the performance of general adaptive and interpersonal skills	Demonstration of competence in the performance of general adaptive and interpersonal skills
	Mastery of repertoires of knowledge essential to the development of self-understanding, commitment, and a preferred teaching style		Demonstration of behavior acceptable as evidence of self-understanding, commitment, and a preferred teaching style	Demonstration of behavior acceptable as evidence of self-understanding, commitment, and a preferred teaching style

Figure 1. Conceptual Framework of ComField Components

Two roles of the Instructional Manager are identified by the program model:

Role I. Facilitator of desired outcomes in children

Role II. Performer of noninstructional tasks required within the school.

The emphasis in this program model is on pupil outcomes rather than on teacher behaviors.

To be consistent with the systems approach requires a task analysis of the role and a competency analysis to perform each task. The task analysis produces desired pupil outcomes which are broadly stated. The next step is to specify the conditions which bring about the desired pupil outcomes, and following this, to identify the competencies needed to provide these conditions.

A task force of analysts suggested seven competencies needed by the Instructional Manager. These were gleaned from a study of abstracts of literature relating to research of teaching. The effective Instructional Manager:

1. Defines objectives
2. Adjusts objectives for classes of individual differences
3. Selects instructional strategies
4. Organizes the learning environment
5. Interacts with learners so they achieve the objectives
6. Evaluates changes in behavior
7. Decides on the next appropriate step

INSTRUCTIONAL TECHNIQUES

Instructional Guideline 3 states that systems design principles should be used in developing learning experiences that lead to the mastery of teaching competencies. This means that instructional systems are the vehicle by which students move through the teacher education program.

An instructional system is a set of learning experiences resulting from an analysis of what is to be learned and structuring that which is to be learned from the learner's point of view. Multiple entry points and multiple paths are always present to allow for individualization, and the evaluation of the objectives depends on observable behavior.

The program model describes a hypothetical teacher education student in the laboratory. There is first an explanation of the task, which sonsists of a brief verbal description and the viewing of a pemonstration model on video tape. The student then may choose the next step from three possibilities. He may:

1. Consult a staff member if the explanation is inadquate.
2. Move to a subsystem providing outside counseling if he ascertains that his values and attitudes are not in accord with the task.
3. Request an opportunity to demonstrate his lesson plan with pupils.

The student selects a behavior for the pupils to acquire, and a subsystem enables the student to write the plan. After the plan is evaluated, the student is sent either through another subsystem providing outside help or additional information, or he is given the opportunity to demonstrate criterion behavior. In this first attempt at demonstration the environment is provided by microteaching or miniteaching, which is followed by conference and evaluation by the staff and the student. The student again has alternatives to:

1. View another demonstration model
2. Revise the original plan
3. Make a second attempt at criterion performance

The program model explains that the instruction consists not only of a student interacting with media, but that special lectures, group discussions, readings, etc. may also be part of an instructional system.

An interesting aspect of the instructional technique is the student's role in determining his goals, choosing the setting for the demonstration, and helping to determine the criteria by which he is to be judged competent. This is accomplished through a process of interaction with a staff member and is referred to as negotiation. This process implies that both members must possess execellent abilities in interpersonal communication if the result of this negotiation may be described as lacking imposition on the part of the teacher educator.

ROLE OF THE TEACHER EDUCATOR

The role of the teacher educator will be very different from that existing in most teacher education institutions today. Individualization dictates a heavy dependence upon the use of media of one sort or another. The professor will find little demand for large group lectures or demonstrations. In order to diminish the danger of dehumanization inherent in the systems approach, there must be a very close relationship between a student and a staff member. The staff member's responsibilities will entail working with the student to assess performance and helping the student make appropriate choices.

Specialization of the staff member, rather than the all-purpose professor, may be required by the instructional systems. The sponsor in the foundations phase manages the self-confrontation experiences and is involved in negotiation with the student. In addition, he may occasionally have instructional responsibilities as well as responsibilities for criterion assessment.

The clinical supervisor is a joint appointee of the university and the public school and has the same responsibilities as the sponsor. While the sponsor has major responsibility for the laboratory phase, the clinical supervisor is largely responsible for the practicum.

The necessity for the availability of staff members when needed by each student might cause the reader some concern over the possibly overwhelming demands on the staff member's time. However, the present adaptation of the program model for the Oregon College of Education provides for an alleviation of this concern. The developer proposes the use of an Instructional Management Staff, composed primarily of students who are employed to negotiate short-term contracts and who could be available for peer teaching. At the same time, the Instructional Management Staff would ease the load of the sponsor. Other institutions might devise different means to suit their individual needs.

EVALUATION TECHNIQUES

The program model points out that the evaluation of the laboratory performances will be different from that in the practicum. The total behavior of the Instructional Manager is broken up into "parts," which are further analyzed into "pieces," and finally the smallest fragments are called "bits." The criteria for evaluating laboratory performance would be based upon "bits" and "pieces," while the practicum criteria would be based upon "pieces" and "parts." In the laboratory phase, the problem is to determine whether or not the student performs to criterion level; either he attains it or he does not attain it.

The evaluation of the student in the practicum concerns the level of performance that has been attained. This assessment process involves the supervisor and the student in appraising the performance and planning ways of adapting in view of the evaluation. The student completes the practicum when:

1. Significant growth is observed in his competencies as an Instructional Manager.
2. The Instructional Manager has demonstrated competence in the roles of professional educator and member of the community.
3. The Instructional Manager has demonstrated increased ability to make judgments about the appropriateness of learners' responses.
4. The Instructional Manager has demonstrated some commitment to the goals of the ComField model.

RESPONSIVENESS TO SOCIETAL AND PROFESSIONAL NEEDS

The original ComField program model makes no attempt to identify the educational goals and needs of society but rather leaves that responsibility to those designing an operational program for a particular institution.

The management system, designed to insure the proper operation of the instructional program model, contains a policy function that serves to clarify and organize the educational goals and needs of society as provided by qualified agencies in society. These needs, which are expressed in terms of pupil goals, are then translated into policy statements by which ComField is guided. There are actually several inputs into the operational program, and in this way, then, the program model may be adapted to fulfill the needs of almost any setting.

At the same time the student himself is given the responsibility for decisions concerning the setting and the age level with which he prefers to work. It is conceivable, therefore, that perhaps the number of Instructional Managers choosing to teach in a particular setting--the inner city, for example--might be inadequate. However, this program model could be responsive to the needs of some members of ethnic groups who might be considered "natural teachers" but who lack the usual academic background.

When an Instructional Manager from ComField moves from one region of the country to another, he might experience some difficulty in securing a new position because his training was the result of the goals and the needs of the program inputs in one institution, and these might differ from those of another institution.

UNIQUE CONTRIBUTIONS

This program model does make unique contributions to teacher education. First of all, it is the only model in which the prospective teacher is evaluated in terms of pupil behavior. To put it more specifically, the performance criteria are stated not in teacher behavior but rather in terms of pupil responses. This implies evaluating the effectiveness of the product instead of the process or the product itself.

Although systems analysis is used extensively, the process of negotiation prevents the dehumanizing effects. The process requires a close relationship between the student and his sponsor and/or clinical supervisor, and a personalized approach is encouraged. As a result of the negotiation the program is not overly prescriptive.

There is much concern for individual differences. The concept of individualization in this program model relates to point of entry, multiple paths, pacing, etc. The individual moves through the program as an individual and is not bound in any way to a fixed group who might hinder his progress.

Another contribution is the program model's adaptability for use by colleges and universities wishing to design operational programs. This is a generic model which requires a large amount of work yet to be done by those designing the operational program for the specific institution.

In addition, ComField is actually two program models. The instructional program model is accompanied by a well-conceived model for a management system to insure the proper functioning of the instructional program model.

MODEL REVISION

Management Guideline 2 states that the systems design principle of corrective feedback should be used within each of the parts of the ComField program model as well as the model as a whole. Four kinds of necessary feedback are identified:

1. Appropriateness of the pupil outcomes that have been selected as guides in determining the competencies to be developed in prospective teachers. Are the ultimate objectives the correct ones?
2. Effectiveness of teachers who have the given competencies in bringing about the desired pupil outcomes. Are these competencies the correct ones?
3. Effectiveness of instructional systems in bringing about competencies for which they were designed. Are the procedures effective?
4. Impact of the ComField program beyond its immediate influence on teachers and pupils. Is the social system changed as a result?

The adaptive-corrective capability is explained in the following way. After any specific action, there must be an evaluation from which one of three choices may be elected:

1. Provides normal forward progression and implies that the initial action is resulting in desired outcomes.
2. Provides bypass beyond the next planned action and implies that the initial action is resulting in desired outcomes. However, the next planned action is judged inappropriate.
3. Implies that the initial action is not producing the desired outcomes and corrective efforts are required. This correction may be a modification of the initial action, modification of the subsequent actions, or abandonment because the action no longer serves the desired purpose.

There are ten functions of the management support system designed for ComField. As it is conceived, one cannot exist without the others; each function contributes its share to the model revision.

RELATIONSHIP TO GENERAL EDUCATION

It must be pointed out that making specifications for general education is a function of the individual institution designing an operational program. The student must meet the general education requirements of the university. At the same time if the assessment of entry behavior of an individual should indicate a need for additional experiences in areas of general education, each student's general education background would be individualized. In this way, the entry behavior of the student would actually shape that student's general education.

As conceived by the program model, general education is present in all the phases of the teacher education program. At the beginning of the student's education, it receives the greatest proportion of time and gradually diminishes as the student progresses through the program.

FEASIBILITY

To implement this program model means the establishment of new relationships between the university and the public schools. While this has been accomplished by some institutions, it might be very difficult for a multi-university, such as The Ohio State University, to achieve this necessary relationship. The part of the program taking place in the field (the public schools) must be, out of necessity, mostly within the realm of the public school. The university might be reluctant, and possibly with just cause, to relinquish this role to the public schools.

The Ohio State University is located in an urban area along with several other smaller colleges and universities which also produce elementary teachers. It is difficult in such a situation to provide an adequate number of qualified, interested public school teachers to assume the role of supervising teacher. It would be even more difficult to secure sufficient numbers of persons of the required quality to act as sponsors or clinical supervisors.

Financing the new program in teacher education sounds relatively simple if the public school assumes the financial responsibility for the practicum. However, in a community where there has been considerable reaction (in the form of refusal) against increased school levies very recently, it is not conceivable that community agreement to support the practicum phase of the program would be likely, and it seems highly improbable that the university would be granted funds by the state to finance the total program.

In short, to adapt this program model to an operational teacher education program would require the total commitment of all who might be involved in it, and this writer does not consider this a probability at an institution the size of The Ohio State University.

RELATIONSHIP TO RECOMMENDED STANDARDS IN TEACHER EDUCATION (NCATE)

As a generic program model ComField is not specific enough to be evaluated in terms of many of the newly revised recommended standards for teacher education.

> Standard: Teacher education curricula are based on objectives reflecting the institution's conception of the teacher's role, and are organized to include general studies, content for teaching specialty, humanistic and behavioral studies, teaching and learning theory with laboratory and clinical experience, and practicum.

The program model identifies two roles of the Instructional Manager, after which a series of instructional systems are devised through systematic analysis to lead to mastery of competencies required to perform these roles. The organizational specifications provide for general education and professional education containing three phases: the foundations, the laboratory, and the practicum.

> Standard: There is a planned general studies component requiring that at least one-third of each curriculum for prospective teachers consist of studies in the symbolics of information, natural and behavioral sciences, and humanities.

There are no specifications for general studies at all in the program model. This work is done at the operational level. The student must meet the general studies requirements set by the particular university, but the nature of the instructional systems might require additional experiences in areas of general studies to provide an adequate knowledge base for an individual student to complete successfully an instructional system.

> Standard: The professional studies component of each curriculum for prospective teachers includes the study of the content to be taught to pupils; and the supplementary knowledge, from the subject matter of the teaching specialty and from allied fields, that is needed by the teacher for perspective and flexibility in teaching.

The content for the teaching specialty becomes part of the required knowledge base upon which to develop competencies. Although the instructional systems are to be empirically designed by specialists, the student, through negotiation, is to have a very real part in selecting the experiences he is to have.

> Standard: The professional studies component of each curriculum for prospective teachers includes instruction in the humanistic studies and the behavioral studies.

Studies of this nature relate to the knowledge bases for performance in each of the four components of the program model.

> Standard: The professional studies component of each curriculum includes the systematic study of teaching and learning theory with appropriate laboratory and clinical experience.

The generic level of the program model does not provide for specific courses and procedures which this standard requires. However, the program model is competency-based with emphasis on knowledge and application.

> Standard: The professional studies component of each curriculum for prospective teachers includes direct substantial participation in teaching over an extended period of time under the supervision of qualified personnel from the institution and the cooperating school.

The nature of the practicum in this program model implies the utmost cooperation of all those involved in teacher education programs. In order for an operational program to function successfully, the supervisors must be superior teachers who are trained in supervision. Part of the rationale underlying the program model emphasizes that the student is given gradually increasing responsibility.

> Standard: In planning and developing curricula for teacher education, the institution gives due consideration to guidelines for teacher preparation developed by national learned societies and professional associations.

The policy function of the management support system provides for a clarification of needs and educational goals of society from information provided by qualified agencies of society. The national learned societies and professional associations perhaps would be considered qualified agencies.

> Standard: The design, approval, and continuous evaluation and development of teacher education programs are the primary responsibility of an officially designated unit; the majority of the membership of this unit is componsed of faculty and/or staff members who are significantly involved in teacher education.

The management support system provides for the successful operation of the instructional program model, but the membership of the system is not defined in specific terms.

The next set of standards relates to the faculty for basic programs--competence and utilization of the faculty, faculty involvement with schools, conditions for faculty service, and part-time faculty. The original program model is not designed to be specific enough to provide the evidence required to meet these standards.

Students in the basic program are the subject of the following set of standards.

> Standard: The institution applies specific criteria for admission to teacher education programs; these criteria require the use of both objective and subjective data.

It is the student's decision to enter the teacher education program in ComField. He is assessed and receives guidance based on this assessment. There are no specific criteria stated in the original program model. However, there is a point where the prospective Instructional Manager meets program entry requirements set by the institution, after which the student may progress to a mastery of repertoires of knowledge in the foundations phase which are essential to the successful demonstration of competencies in the laboratory and the practicum.

> Standard: The institution applies specific criteria for the retention of candidates in basic programs who possess academic competencies and personal characteristics appropriate to the requirements of teaching.

The program model allows the student to remain in the program indefinitely. It would be the responsibility of the operational program to fix the limit.

Standard: The institution has a well-defined plan for counseling and advising students in teacher education.

The technique of the instructional systems and the process of negotiation imply a well-defined plan for counseling and advising.

Standard: The institution has representative student participation in the evaluation and development of preparation programs offered by the institution.

Student involvement in the evaluation functions and policy adaptation functions is not clear in the original program model. However, the present adaptation of the program model at the Oregon College of Education does make provision for a large amount of student involvement.

THE NORTHWEST EDUCATIONAL REGIONAL LABORATORY
(COMFIELD) PROGRAM MODEL

Analysis by Roger T. Cunningham

RATIONALE

The ComField Model is a product of a consortium consisting of 26 colleges and universities in the Northwest Region, five state Departments of Education, and the Teaching Research Division of the Oregon State System of Higher Education. This combined effort was initiated by the Northwest Regional Educational Laboratory with the Oregon College of Education established as the lead institution.

The rationale for the program model is rooted in respect for the differences among future teachers. It recognizes that different people learn in different ways and at different rates. Most of all, it recognizes their individuality.

At all times it must be kept in mind that the guidelines established are intended only as a model designed to be adaptable to a variety of situations rather than a prescription or group of specifications designed to define a particular program for teacher education. Therefore, throughout the descriptions of the general features, the adaptability of specifications to situations-specific is an important consideration.

The basic aim of this program model is to prepare teachers who are able to bring about change in the behavior of children. Philosophically, this aim is couched in the view that learning is brought about when change in behavior can be demonstrated. The model developers feel that teachers in training must be able to demonstrate the ability to change behavior and bring about learning in children before they assume responsibility for it in the classroom.

As such, the model represents a process for teacher education. It is a process that requires its recipient to (a) know what it is that he wants to accomplish, (b) order events to insure probability of accomplishing it, (c) assess the events for their effectiveness in accomplishing the intended goal, and (d) if the goals do not succeed, modify them so that they do.

A major assumption within the model is that the continuous demonstration of this pattern of teacher behavior will lead to the ultimate goal of any teacher education program; that is, the development of generally adaptive, self-directed career teachers.

Therefore, the model is based on development and demonstration of competencies within the above mentioned aims. As students move through a ComField based program they are not only made aware of the process by being continuously subjected to it in their own learning but also required to demonstrate the process in their preliminary teaching. The ultimate product of the program is teachers who are skilled in the competencies and trained as instructional managers.

The model developers have committed themselves to ten propositions that serve as a conceptual framework underlying the model. (See Appendix A.) Some of these propositions are related to the matter of instruction while others are related to the matter of management. Therefore, two inseparable but distinct models were developed: (1) a competency based, field centered instructional model, and (2) a management systems model that provides support functions.

COMPONENTS

The instructional model consists of three phases: Foundations, Laboratory, and Practicum. Throughout each of these three phases the emphasis is on the development of instructional and noninstructional teaching competencies derived from analysis of teaching behavior and deemed necessary as behaviors that elicit change in the behavior of pupils. The student first develops the prerequisites necessary for understanding these competencies, demonstrates these competencies in smaller pieces under simulated conditions, and synthesizes these pieces and demonstrates the competencies in an ongoing classroom situation. Throughout the instructional program the student strives to personalize the competencies and to employ adaptive procedures in pursuit of an identification of his own unique teaching style. A mechanism for continual feedback on the success of his performance is used as a basis for making decisions about the next instructional step.

The content and instructional activities that comprise each of the three phases of the instructional program were derived from analysis of teaching behavior. A summary of the content and activities for each phase is found in Appendix B.

Recall that two models were developed. The rationale underlying the instructional model includes six guidelines. The first guideline states that the content of a teacher education program should be derived systematically. This requires determination of the major outcome, in this case, persons who can bring about appropriate changes in pupil behavior. Once the outcome is established, the steps leading to it must be described. They consist of: (a) specification of desired pupil outcomes (goals of education); (b) specification of conditions by which each outcome can be realized (instructional program in schools); (c) specification of teacher competencies needed to provide conditions (goals of teacher education); and (d) specification of conditions by which competencies are realized (the teacher education program).

The second guideline notes that the objectives of a teacher education program are defined in terms of overt behaviors that evidence realization of the objectives. Specification of behaviors is situation-specific. Operationally, this means the content and strategy involved in instructional behavior must always be defined in terms of their appropriateness to (a) a given pupil outcome, (b) a given pupil or set of pupils, and (c) a given instructional setting.

Guideline three states that systems design principles should be used in developing learning experiences that lead to the mastery of teaching competencies. This involves systematic analysis of what is to be learned, systematic structuring from the learner's point of view, and empirical development of a set of learning experiences that move the student through the structure. Provisions are made formultiple entry points, multiple paths based on the learner's background and learning style, and recycling of learning based on the nature of the learner's progress. (Refer to Appendix C for a schematic representation of the structure for the instructional program.)

Guideline four states that provisions should be made for individual differences.

Guideline five states that provisions should be made to enhance differences in outcomes and development of personally relevant teaching styles. Personalization of teaching competencies is a key to decisions made in the instructional process. Differences in expression of competencies are encouraged. Self-understanding and commitment to developing a personal teaching style are an integral part of the whole program as well as a part of each competency.

Guideline six emphasizes that competencies must be demonstrated in two contexts (laboratory and classroom) before full teaching responsibilities are assumed.

The above guidelines for the ComField model dictate in broad outline form the make-up of the instructional program. They do not dictate what competencies are to be developed, how personalization is to take place, or when they will be demonstrated in a real context. For the most part, these aspects of a student's learning are negotiable with a staff member and are to be decided by the student.

Generally speaking, the three phases of the program follow one another in time; the Foundations Phase precedes both the Laboratory and Practicum. (Refer to Appendix E.) The relationship between Laboratory and Foundations is one of providing for individual differences. Nothing is fixed about the sequence, since students may start mastering the competencies at any time. This is not true for the Practicum phase, however, since a competency must be demonstrated in the Laboratory before it is conducted in the classroom. However, provisions are made for recycling back into the Laboratory and Foundations phases during the Practicum phase if prerequisite knowledge or skills are needed. In addition, the sequence is determined in part by the need for prerequisite skills and knowledge and the difficulty level of competencies. Competencies demanding a greater degree of skill are preceded by simpler or more basic competencies. Progress through the instructional systems is dependent on criterion performance. A ComField-based instructional program is a performance based and not a time-course dependent program. A schematic diagram of each of the three phases is shown in Appendix D.

ComField is designed to produce instructional managers who elicit appropriate changes in the behavior of their pupils. The education of instructional managers can be described in four stages.

Stage one consists of entry into the program. At this point of entry it is determined if the candidates has the prerequisites. These prerequisites constitute entry behavior. They are the knowledge and skills a student needs to be assured of success in the first instructional systems (the Foundations phase) in the professional program. Specification of entry behaviors provides a systematic base for selection and a way of establishing a starting point for each individual student. The entry behaviors are ability to recall facts, utilization of this information, or demonstration of basic skills. The planners suggest that entry behaviors would set prerequisites for the general education phase of a student's program. However, elsewhere in the model description the authors suggest that the student himself would elect to enter the program. They imply that the defined entry behaviors would eventually serve as criteria for courses and learning experiences in the general education program prior to entry into the professional level. This might suggest early identification procedures. However, the model does not address itself to this aspect of teacher education.

Stage two consists of the Foundation Systems. It is at this stage that the student develops the repertoires of those knowledges and skills that are needed for judging the appropriateness of learning activities. They enable him to recall and use knowledge about the relevant content fields of elementary teaching, about a universe of learning outcomes, about the traits and about characteristics of the learners he will confront. For example, skill in writing behavioral objectives in the activities of the later stages would be developed in this phase. Some of the same traditional content areas (science, mathematics, social studies, etc.) are dealt with but differ in focus. The focus is on what the student needs to convey the content to pupils rather than the content per se. Exemplary models for teaching mathematics are described in the appendixes. The content for this stage is summarized in Appendix B.

In stage three the student enters the Laboratory Systems to demonstrate competence in all the significant elements of the teaching act. The Laboratory is the heart of the program model. In the Laboratory the student, about to become an Instructional Manager, has opportunities to practice each of the significant behaviors that are essential for effective instructional management. The Laboratory phase provides for the following:

1. Systematic analysis of the range of behaviors and identification of tasks
2. Definition of tasks in behavioral terms and an ordering of tasks according to their complexity
3. The design of instructional systems to produce the teacher behaviors identified in each task. The following elements comprise the instructional systems:
    a. Provisions for communicating desired behavior to student, identifying the student's entry behavior, separating the task into component activities leading to criterion behavior, selecting media to implement activities, assessing procedure for each activity, providing alternative activities of different levels of behaviors at each assessment point, and providing opportunity to demonstrate the criterion behavior. (Refer to Appendix C for diagram.)

    b. In addition, students should demonstrate capabilities for judging the appropriateness of the learning they specify for pupils by considering its relation to current authoritative descriptions of the content field, probability of pupils success and "pupil-fit" and the taxonomic level of learning expected. Evaluation of the student's ability to implement objectives includes all four of these considerations.

Stage four constitutes the final phase of the instructional program. In this Practicum Phase, the practicing Instructional Manager synthesizes those behaviors he learned as individual tasks in the Laboratory into a continuous teaching pattern. He continues to build on the competencies increasing his ability to rationalize particular teaching acts. Here he justifies his choices of objectives, appropriateness for content, specific learner outcomes, and characteristics of the learners.

The Practicum is designed to accommodate the typical Instructional Manager for two to three years. It encompasses what is traditionally thought of as student teaching, orientation to teaching, and beginning teaching. It provides a continuous growth program. Thepurpose of the Practicum is to produce that person who is effective and efficient at eliciting changes in pupil behavior, who has a rational basis for deciding on the appropriateness of these changes in behavior, who is committed to choosing significant goals for different kinds of individuals, who is capable of adapting and developing a unique personal teaching style, and who has demonstrated he is able to assess his own performance realistically and can design his own continuous program of self-improvement.

The Practicum also requires performance to criterion before the student is recognized or made a certified career teacher. Time and credit hours have no bearing on progress. If schools would permit, it is possible for the Instructional Manager to reamin in the Practicum indefinitely.

There are no specific, independent learning experiences within the ComField instructional program model designed to bring about personalization of the competencies. However, personalization is a major part of any instructional system and takes whatever form is required. Two steps are involved in the personalization process: (1) developing an initial understanding of one's self, one's value structure, and one's orientation to a teaching style; (2) synthesizing the professional competencies into a unique and personally relevant teaching style.

The noninstructional competencies (Role II responsibilities) are given attention on all of the last three stages of the program model. Tasks that include conferencing with parents, working with peers, establishing school policy, and administrative tasks are developed in the Practicum. What is important here is that ComField gives attention to these tasks in a systematic way providing for parallel development with the instructional tasks (Role I responsibilities).

The program model is philosophically consistent as demonstrated by its commitment to the individual and enhancement of individual differences. Throughout the program, provisions are made for individually prescribed activities, individual contact with staff, self-selection, self-appraisal, and different learning activities. It is also consistent in its systematic analysis of teaching, definition of tasks, and systems approach to educating teachers. Similar consistency can be demonstrated in the use of behavioral objectives. They are used as a basis for the design of the model as well as in describing the competencies to be developed and the criteria used in assessment of the ability to demonstrate these competencies.

OUTCOMES

The product in this model is the effective Instructional Manager who elicits appropriate changes in the behavior of learners. In general terms, the ultimate criteria for effective instructional management is that pupils demonstrate appropriate changes in behavior.

From the literature on research on teaching, a detailed task analysis was conducted resulting in the identification of seven components of teacher behavior that elicit appropriate changes in pupil behavior. The effective Instructional Manager defines objectives, adjusts objectives for classes of individuals, selects instructional strategies, organizes the learning environment, interacts with learners so that they achieve the objectives, evaluates changes in behavior, and decides on the next appropriate instructional step.

A second level analysis of the above components resulted in the defining of tasks that comprise the learning systems in the program. A systematic approach to learning these tasks constitutes the program of instruction. These components also serve as the criteria for evaluating the teaching of these tasks. Because the program is behaviorally oriented, these componants are defined as significant blocks of behaviors, which, when performed by the student, represent a significant advance in the body of competencies needed by the effective Instructional Manager.

In addition to being able to cause and recognize behavioral change as evidence of learning, the effective Instructional Manager must be able to assess the value of these changes on a rational basis, provide for differentiated goals, and continually redesign his teaching style based on the assessments he has made of its effectiveness for changing pupil behavior.

The model developers conceive this total process of determining objectives, criteria and learning systems for teacher education as a system. In other words, the instructional program is a systems design that allows for a systematic approach to mastering the teaching competencies. In this system, the student continually re-examines the judgments he makes as he defines objectives and criteria. This provides feedback for determination of alternative procedures. In this way the student in the system is not only a product of the system but also an analyzer of the system.

INSTRUCTIONAL TECHNIQUES AND PROCESSES

The instructional program that develops the product described above consists of a chain of activities systematically arranged so that the individual student will be successful in demonstrating appropriate behaviors.

The strategies for moving students through a series of tasks must be consistent with the broad goal of the model-eliciting appropriate changes in pupil behavior. The test of the strategy for educating the student of teaching is that the student will demonstrate to criterion level the behaviors that were identified as evidence of being an effective Instructional Manager. The means of enabling students to demonstrate behaviors in this model is a series of learning systems consisting of the following five elements:

1. Statement and explanation of desired behavior
2. A procedure for assessing entry level in relation to desired behavior
3. Alternative sequences of learning activities in which each learner either successively completes behaviors, demonstrates an advance level of entry and bypasses essential steps, or demonstrates deficiency and meets prerequisite to essential steps (recycling)
4. A criterion task in which the learner demonstrates the behavioral objective in terms of generalized performance
5. A second criterion task in which the learner demonstrates behavior in terms of situation-specific performance standard

For a schematic representation of the instructional sequence, turn to Appendix C.

"The systems approach makes use of all instructional strategies that have value in bringing about a given learning outcome. Special lectures, small group discussions, reading, observation of films or real life settings, laboratory simulations, and microteaching experiences are as acceptable to an instructional systems design approach as they are to current educational practice. So long as they are organized around the development of explicit performance outcomes that relate to explicit tasks that the prospective teacher must perform. A major strength of the instructional systems approach is that each system has built into it provision for review, revision, and modification, and thereby correction, if performance from it is below the minimum acceptable level."

A limited number of competencies or behaviors have been described by the model. Some of these are negotiable and some are not. A student may not have any option on the competency that he is to demonstrate during the instructional process but he may negotiate with his faculty counselor on the method by which he will demonstrate this competency, the situation-specific conditions under which he will demonstrate it, and the criteria on which he will be judged effective in demonstrating the competency. These negotiable factors must be afreed upon by both the staff member and the student. However, the negotiable competencies must be within the limits defined in the specifications of the program. The criteria for judging effectiveness must be a reflection of behaviors specified as indicators of mastery of the competencies proposed in the model. The universe of possibilities in each case gives a great deal of flexibility to the instructional process. One point of concern is that the pupils may be able to show behavioral change but the student might still be ineffective. This possibility suggests the need for a more sensitive means of evaluation. The model developers express confidence that the measurement problem can be solved in time. In the negotiations between the student and a faculty member the indicators of proficiency must be carefully worked out. The model provides for an arbitration board where agreement cannot be reached.

The instructional process for the Laboratory Phase can be described by three steps:

1. The student selects some information or specific skill which will be a new behavior on the part of his pupils. The student receives an explanation of the task. This includes a description of the behavior that is to be demonstrated and a model presented by some mediated means (audio- or video-tape) of a teacher successfully demonstrating the behavior defined in the task. If the task is not clear or he is not sure of the reasons for the task or its value to him, the student may confer with a staff member or move into a subsystem for outside

counseling. If he feels he knows the task then he can proceed to write his plan for the activity in which he will perform the task.

2. The student plans activities which presumably will lead to demonstration of the new behavior. The plan includes a behavioral objective which will serve as a criterion for evaluating performance. The means for evaluating and the level of performance will depend on the student and his progress. The behavioral objective may be evaluated by other students. Alternative strategies are made available by the staff at this point. The student might go to a subsystem and rewrite his plan. In addition to a behavioral objective, strategies and alternative procedures are described. The plan is evaluated by the staff.

3. The student demonstrates his instructional plan with real pupils, obtains real responses, and assesses the results of the performance. When the instructional plan is deemed appropriate, the student requests a small group of pupils. In a microteaching situation he demonstrates the plan with these pupils. The criterion behavior of the task, as described by the student's behavioral objective, serves as a means of assessing his success at changing pupil behavior within the context of the described task. Five-minute video-taped recording of the student demonstrating the task serves as the basis for evaluation. At this point a new set of alternatives is offered or the student may go on to the next system or set of activities.

Recall that in the Laboratory Phase the student demonstrates his ability to perform certain elements of teaching as isolated tasks dealing with a very specific behavior to be demonstrated with a small group of pupils. Recall also that the Practicum is a continuation of that Laboratory Phase where these elements of teaching are performed in larger blocks, in a classroom setting and with a whole class of pupils. Therefore, evidence of his competence for performing these elements of teaching in the Practicum Phase is determined by his ability to synthesize the individual tasks performed in the Laboratory into the entire teaching act. In the Practicum the Instructional Manager is to increase capacity to judge the appropriateness of pupil responses. He is also responsible for increasing his repertoire of skill in self-direction and self-appraisal procedures. Where the ComField staff member served to counsel the student before, the supervisor, a classroom teacher, serves in this capacity. The supervisor and Instructional Manager together assess performance and plan ways to adapt to that assessment. The appraisal is based upon the behavioral objectives which defined the instructional systems in the Laboratory Phase.

Because of new kinds of contacts with different individuals, his colleagues and other adults, concern for professional relationships is given to this part of the program. Assessment also includes judgment of student's commitments to certain goals.

In the Practicum Phase the program model provides for continual evaluation of competency development toward criterion behaviors. This is facilitated by counseling with his supervisor, examining additional models of teaching behavior, assessing his own behavior recorded on audio- or video-tape, and planning for alternative routes for competency development.

ROLE OF THE TEACHER EDUCATOR

A ComField based program is designed to free the college instructional staff from the traditional role of information giver to direct its energies to new focus in the curriculum including assessment, diagnosis, and prescription functions that become so critical with individualized instruction. This will require new ways of obtaining and using information about individuals.

The teacher educator will be required to enter a variety of roles and relationships and be responsible for anumber of functions. Staff members in a ComField based program will stay with a few students (perhaps fifteen), counseling them, providing learning activities for different instructional systems, facilitating decisions, and negotiating on task development. As a counseling staff member, the teacher educator will need to facilitate variety in the student's program and movement from one task to another and from one phase to another. New kinds of roles in interpersonal relationships will need to be developed.

Because explanations and information are needed at almost any time by a number of individuals for different purposes, the professor rarely talks or demonstrates to a large group of students. The system requires that frequent evaluation and feedback be given to the students. Because of the individuality of their programs, this must be done with students on one-to-one basis. Facilitating the adaptiveness of any individual instructional program will be a necessary responsibility. This will require some ability to develop and utilize the computer-based retrieval system.

The educator will have to assume the role of selector-producer. He will have heavy responsibility, particularly in developmental stages, for the selection and utilization of assessment instruments, tools, and materials. He will select and design models for teaching behaviors used in the instructional program. He must also be able to make provisions for alternative routes or tasks, simulated materials, and instruments for determining effectiveness of teaching performance.

New skills will be demanded of both instructional and support staff. The instructional staff will be linked closely to management in setting program policy and developing instructional systems. Greater involvement and contact with the public schools will be necessary to facilitate the activities of the Laboratory and Practicum Phases of the program.

EVALUATION TECHNIQUES

The model provides for two approaches to evaluation. At the instructional level it is determined if the student performs to criterion level for each specified task. Later in the Practicum Phase, the problem is to assess what level of performance has been attained by the practicing Instructional Manager. In the Laboratory Phase the student will demonstrate a piece of the behavior. In the Practicum Phase he will demonstrate the whole behavior. Instruments for measurement of performance will be different under these two situations. The Laboratory assessment will be more detailed and specific. Recall that the instructional components are described in behavioral terms. Therefore, demonstration of these teaching behaviors constitutes successful performance. Because each behavior is unique in its demands for performance, they cannot be appraised in the same way. This requires different instruments for measuring the degree of successful performance with each behavior.

In the learning system context, the appraisal is a "go or no go" kind of subjective judgment because of its performance base. The decision must include the learner, a staff member, and may include other students. Frequent and continuous evaluation is crucial with provisions made for recycling into new or supportive activities, alternative routes to mastery of a task, or repeating the same tasks.

Evaluation of the Instructional Manager in the Practicum Phase is based on growth in his mastery of the competencies, in his role as a professional educator and member of the community, and in his ability to make judgments about the appropriateness of learners' responses. He must also demonstrate a commitment to the goals of the ComField model. Arriving at decisions regarding competence at the Practicum level includes several people. By the nature of its intended outcome, this includes the practicing Instructional Manager. Because of the emphasis on developing a product who is self-appraising a great deal of stress is placed on self-evaluation in the Practicum Phase. An example of an appraisal instrument is described in the Phase I appendixes. This two-part rating scale is designed to assess both the technical competence and valuing behavior of the Instructional Manager as a changer of behavior. Part two of the instrument deals with the effectiveness of the plans and performance of the Instructional Manager for a particular set of objectives.

The model is consistently performance-oriented. Therefore, assessment is based upon performance to specified criteria. Nevertheless, it is subjective. Measuring devices remain to be developed.

RESPONSES TO SOCIETAL AND PROFESSIONAL NEEDS.

The developers of the ComField model present two predictions for the nature and purpose of education in the 1970's and beyond. Serving as important bases to the design of the model, they are:

1. A functional science and technology will evolve, bringing with it a markedly different educational program. Two changes are anticipated:
    a. Widespread use of pupil-materials instruction.
    b. The application of systems technology in the design of instructional experiences. Out of both will grow the application of "instructional systems" to the education of children.
2. Three major classes of educational specialists are anticipated to accommodate the predicted outcomes.
    a. Instructional analyst to identify classes of pupil behaviors and instructional conditions
    b. Instructional designer to develop instructional systems to bring about outcomes
    c. Instructional manager to create and maintain the instructional environment that brings about learning

The commitment to the demonstration of requisite teacher behaviors in a classroom context has far-reaching implications for the structure and organization of teacher education programs. Preparation becomes more relevant as greater time is spent in schools. Greater involvement of schools for the responsibility and planning of the program facilitates relevancy of the preparation.

Many of the crucial issues in the form of professional or societal needs are considered in a variety of ways in the ComField Model. Some are dealt with very directly while others are considered in a very indirect way. Individualization of instruction is very much a part of the ComField Model as is the utilization of technology. Although there appear to be no specifications as to how the Instructional Managers will employ technological facilities once they are on their own, provisions for in-service education are a part of the ComField program model. Provisions are made for training of supervisors to assume roles in the direction of teacher education in the public schools. The adaptibility feature of the program model to situations-specific allows it to be used in situations where teachers are being prepared to work with the disadvantaged and still keep all its desirable features. From time to time throughout the model consideration is given to preparation of Instructional Managers who will work with children of different age levels including early childhood. Although the program does not address itself specifically to the training of paraprofessionals, its adaptibility feature should permit this possibility.

The material contained in Appendix O of the Phase I description under the title of "The Human Relations School" seems to serve as input for the program model. This document addresses itself to both the crucial issues of professional needs and societal needs as well as needs related to school organization and elementary school curriculum.

In general, the model seems to do a very adequate job of considering many of the professional as well as societal needs.

UNIQUE CONTRIBUTIONS

Features of the model that are unique include:

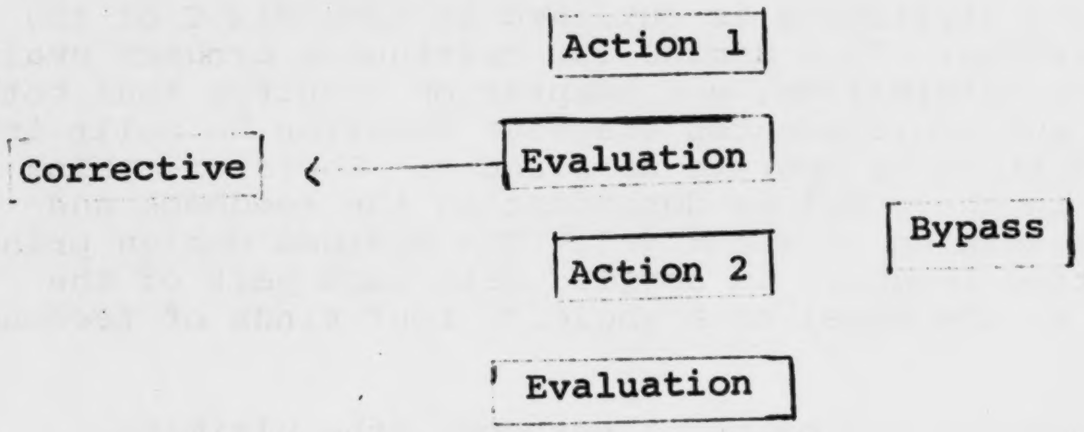
1. Replacement of formal courses with a series of competency-based tasks
2. Provisions for personalization of those competencies into unique teaching styles for different individuals
3. A field experience based program necessitating demonstration of competencies both in a laboratory situation and real life situation
4. Early identification with children and schools in a learning context
5. The use of overt behaviors as acceptable evidence of given teaching competencies

6. A systematic analysis of teaching tasks and development of teaching competencies needed by teachers to bring about change in pupil behavior
7. Students placed in a position of decision-maker about teaching and learning early in their experiences
8. Students placed in a position of making a greater number of choices about their own learning
9. An adaptive mechanism to insure continuous modification of the program in light of cost, effectiveness, and appropriateness
10. A computer-based information management system used to effectively meet frequent and diverse demands for information
11. Extension of preparation into initial teaching through the first few years in a school
12. Provisions for determination of entry behaviors of students in the program to provide for individualization of development
13. Preparation of Instructional Managers capable of bringing about learning by changing pupil behavior
14. Preparation of a teacher who is more capable of assessing his own performance and designing his own plan for adapting and improving his competence; that is, one who is capable of applying a systems approach to teaching and learning
15. Greater responsibility and representations of schools in the planning and maintaining of a program of teacher preparation
16. Prolonged and more personalized contact between faculty and students

MODEL REVISION

A ComField based program will be kept current through the adaptive-corrective mechanism built into the program model. The major feature of this mechanism is that it is a means for dealing with emerging problems and changing needs. "One of the factors that is critical to the success of such a design is the capability for determining how effectively its purposes are being achieved. The means for making such judgments depends upon a comprehensive system of evaluation; one that will provide data on the nature of outcomes and on the operations that were designed to elicit those outcomes." The desirable feature of the adaptive-corrective mechanism is that it is a means for making these evaluations or feeding the available data back into the system when the changes are made at some later time. The immediacy of the mechanism is what gives it its power as a means of keeping the program current.

The following diagram is a schematic representation of the adaptive-corrective nature of the management system in ComField taken from the Phase I description.



"The evaluation functions involves the gathering of data to satisfy questions of how effective and appropriate the outputs of ComField are as well as the impact that they make." As used here, effectiveness is concerned with determining how well ComField accomplishes the purposes for which it was created. Appropriateness is concerned with determing whether the objectives of ComField are valid, that is, whether they are serving the needs for which they were established and impact is concerned with estimating the effects of ComField on the larger environment in which it exists.

This same mechanism that operates on the program as a whole operates within the instructional program for the individual student. Adaptive strategies are used to determine the ability of the student to diagnose learner difficulties and potential, to make prescriptions based on valid diagnosis, and to implement or carry out these prescriptions.

At critical points of decision making or planning during all three phases of the program, alternative strategies are proposed. The alternatives proposed must be closely connected with careful and valid diagnosis of the individual and his progress. The systems design of the program provides for recycling or looping out of the main channel of learning activities to deal with specified alternatives that may facilitate developing competence with the learning activities that constitute an individual instructional program. Therefore, the alternatives must be specific to the individual. The basic premise is that if one is aware of his tendency toward accepting certain data and rejecting other data, he has a better chance of controlling his behavior and his perceptions.

The power of the adaptive mechanism is the growing awareness of self. The student, as a result of diagnosis and consideration given to alternative routes, begins to make decisions about his own abilities and thekind of role he will serve as teacher or whether teaching is even for him. For example, as increasing amount of knowledge becomes available, certain kinds of decisions toward working with certain age levels or teaching roles may begin to be made. A detailed description of the general adaptive strategies is outlined in Appendix C of the Phase I description. "The demand for continuous program evaluation, feedback information, and adaptation requires that both an evaluation and unprecedented adaptive function be built into the program if it is to operate as planned. Decision-making at all levels in the model is dependent on the feedback and the adaptive mechanism of the model. The systems design principle of corrective feedback is applied with each part of the model as well as the model as a whole." Four kinds of feedback are provided:

1. Appropriateness of pupil outcomes (the ultimate objectives) used as guides for competencies

2. Effectiveness of instructional system for competencies (effectiveness of teacher education program)

3. Impact on schools and the social system

4. Cost/benefit and cost/effectiveness data, which also provide feedback for decisions about program operation and priorities

By the very nature of the context in which it was designed (the ComField Consortium with 26 institutions that differ greatly in the nature of their commitments), the ComField model provides for extensive adaptability. A concerted effort was made to provide a basic framework that would permit the flexibility of adapting the components of the model to each of the situations-specific contexts of a particular institutions and its coalition schools. This is to permit ComField based programs that may differ greatly to still operate within the guidelines of the model.

In addition to the above mentioned features, the continued working relationship between the university and elementary schools will require continued adaptation and revision.

RELATION TO GENERAL EDUCATION

The three phases of the program model, Foundations, Laboratory, and Practicum, constitute the professional education in a ComField-based program. Entrance into the professional level requires identification of Entry Behaviors. These Entry Behaviors constitute a starting point for each individual, and therefore may be different for each individual. The behaviors are defined as "those abilities to recall facts, use this information, or demonstrate basic skills, each of which is absolutely essential for success in the first instructional systems which form the professional ComField program." The nature of the behaviors demonstrated by any given student and the level of competence for each behavior depends on his educational experiences prior to their determination. To demonstrate these behaviors requires drawing heavily on the individual's prior educational experience. Initially, the behaviors demonstrated and level of mastery of these behaviors serve as a guide for the instructional program for a student during the initial or Foundations Phase of the professional level. Therefore, the individuality of instructional programs begins with this first step in the program. Because the behaviors and level of mastery will be different for each individual, the instructional program during the Foundations Phase must also be different. The developers of the program model hope that eventually the Entry Behaviors would serve as criteria for the selection of educational experiences or courses that the student would take during his general education or liberal arts educational program prior to entry into the professional level.

The professional program, consisting of the three phases of the ComField-based program, will constitute one-third to two-fifths of the total baccalaureate program. "The remainder of the baccalaureate program will allow for a broad liberal education in which the candidate meets all of the requirements deemed necessary of the liberally educated person by a particular college, together with the requirements for an academic major or an interdisciplinary major."

The systems design of the professional level program under the ComField model provides for looping out of the main channel of learning activities to develop facilitating or basic needs to deal with any of the main stream learning activities. It is very likely that the student would go to the general education part of his program to acquire these needs. This feature is possible because the student will continue with the liberal arts courses or general education program simultaneously with the professional education program. This looping out feature also allows him to option out of the professional program and pursue another program of preparation that may be a part of his general education course of study.

The power of this relationship between the professional education block and the general education block of a student's program would appear to permit a great deal more relevancy to the competencies the student is seeking to master. It would also appear to give more relevancy to the content he teaches while demonstrating these competencies. Recall that the instructional procedure calls for the student to define behavioral objectives and plan a learning experience that will permit demonstration of these behaviors by students. To do so will require some knowledge of the subject matter dealt with in this learning experience. In addition, it requires a knowledge of the nature of the learners involved. The student can gain this needed knowledge from the general education component of his program. Therefore, the liberal arts or general education component is functional for the ComField-based program.

It is not difficult to see how this same procedure would be extended to the development of the noninstructional or facilitating competencies being mastered in conjunction with the instructional competencies. The student may loop out of the learning system to obtain certain needs, knowledge, or counseling related to these competencies in the same way he would for the instructional competencies.

FEASIBILITY

Implementation of a ComField-based program under any existing conditions would encounter several obstacles. Some of the most desirable features of this model would present major problems of implementation. However, one cannot deny that the outstanding features of this model are directed to the heart of the crucial problems of existing programs of teacher education.

On the other hand, implementation of these aspects of the program model compounds the existing problems of adequate staffing, facilities, methods of dealing with large enrollments, and monies available for operating effective programs.

Some of the major problems of implementation would be:

1. Securing and/or training faculty members. Convincing large numbers of college educators of the need for extensive retraining and allowing time for such training seems an insurmountable task. Securing funds to attract suitably trained instructional staff to institute the ComField model seems equally difficult.

2. Accommodating large numbers of students presently enrolled in programs of preparation. This is compounded by the low faculty-student ratio suggested in the model. It also increases the demand for additional staffing and facilities. However, alternatives such as implementing the program with smaller numbers initially, moduling or conducting several Com-Field-based programs simultaneously for different situation-specific contexts might be worthy of consideration.

3. Making numbers of children available on demand. The problem of transporting children to and from laboratory facilities alone is overwhelming. This, too, is compounded by the large numbers of students in the program.

4. Availability of a sufficient number of quality schools and qualified or potentially qualified school personnel. Time, travel, numbers, and commitment to such a program add to the complexity of this problem. The necessity of prolonged involvement (2-3 years) in a school for the Practicum phase, coupled with the numbers that must be dealt with, presents a major problem of logistics.

5. Lead time and effort necessary to establish functional relationships with school personnel, other faculties, skilled staff, and state departments. Similar time and effort to prepare staff, test instructional procedures, and establish computer-based information management systems seems beyond the range of immediate possibility. The large institution may, in some cases, be able to economize because of the availability of established systems.

6. Securing adequate facilities and materials. Time, effort, and money to provide space, audio-visual materials and apparatus, printed materials and managerial systems can only add to the problem of overtaxed facilities and gross lack of materials and money in existing programs.

Obviously, these considerations are very negative. Some alternative considerations are as follows:

1. Early exposure to the teaching act and continual decision making, coupled with mechanisms for identifying potentially effective Instructional Managers may help to eliminate some of the problem of large numbers. It is very possible that the use of these procedures may cause some students to self-select themselves out of the program earlier than they would ordinarily or before they have so much invested in the program. It is also possible that a smaller number

might be encouraged to pursue other fields of endeavor on the basis of data determining their potential or lack of potential for effectiveness in the classroom.

2. As suggested by the model developers, the plan of the model frees the instructional staff from many of the traditional demands; thus energies could be directed to new focus within the curriculum, and in part to the assessment, diagnosis, and prescription function that becomes so critical with individualized instruction. In other words, these energies may be directed to activities other than those of instruction.

3. If implementation of a ComField model can be successful within the context of its design (the ComField Consortium with 26 colleges and universities, their coalition schools, five state departments of education, and two research centers), then possibly it has strong implications for a single large institution.

Considerations proposed by the model developers that help offset the apparent demand for new resources include the following:

1. A major responsiblity for instruction in the Practicum phase of the program will be assumed by participating early childhood and elementary programs. In other words, supervisors and elementary school classroom teachers in participating schools will assume the major role in teacher education at this stage, releasing staff to focus on other aspects of the program.

2. Once a pool of effective instructional systems has been developed, research and development costs will go down. This, of course, does not deny the heavy investment needed in research and development activities to launch or maintain a ComField-based program. Neither does it deny the need to prepare participating school personnel to assume a functional role within the program but it does suggest that there are alternatives that are not apparent on first reading that serve to lessen the resources needed.

RELATIONSHIP TO RECOMMENDED STANDARDS IN TEACHER EDUCATION (NCATE)

Because the model does not address itself specifically to certain recommended standards, assessment of its relationship to these standards is difficult. Although the model provides some parameters for new faculty roles, it does not provide specifications for responsibilities. Therefore, those NCATE standards to which the model does not address itself specifically or does so in a very limited way include the following:

a. "Conditions essential to the effective performance by the teacher education faculty." The developers of ComField propose that faculty time and energies will be used in a more economical way but they do not go beyond this point to specify conditions for faculty services as suggested in the NCATE standards.

b. "Part-time faculty meet the requirements for appointment to the full-time faculty and are employed only when they can make special contributions to the teacher education programs." Because of the heavy demands of faculty time and skill when a ComField-based program is implemented, this standard may be difficult to meet. The model developers do not address themselves specifically to the need for part-time faculty but the demands of support staff and the implementation of the Practicum phase will demand individuals who can serve in this capacity.

c. The model does not address itself to the recommended standard on library facilities to support instruction, research, and services pertinent to the program. However, it would seem that such facilities would be of necessity upon implementation of the program model.

Those standards to which a highly significant relationship can be observed include the following:

a. "The professional studies component of each curriculum includes the systematic study of teaching and learning theory with appropriate laboratory and clinical experience." The specifications and nature of the Laboratory phase of the program model match this recommended standard very closely. However, the emphasis on behavioral objectives may limit breadth in the study of learning theory.

b. "The professional studies component of each curriculum for prospective teachers includes the study of the content to be taught to pupils, and the supplementary knowledge, from the subject matter of the teaching specialty and from allied fields, that is needed by the teacher for perspective and flexibility in teaching." The specifications for and the nature of the Foundations phase of the program model are closely in line with this standard.

c. "The professional studies component of each curriculum for prospective teachers includes direct substantial participation in teaching over an extended period of time under the supervision of qualified personnel from the institution and the cooperating school." The Practicum phase of the program model matches this standard very closely.

d. "A well-defined plan for counseling and advising students in teacher education." Although the specifics for counseling are not contained within the model description, the guidelines for such a plan are defined. In addition, the continuing relationship of a faculty member with a limited number of students, as prescribed by the model, facilitates such a plan.

e. Two of the standards--"a well-defined plan for evaluating the teachers it prepares" and "evaluation results used in the study, development, and improvement of the teacher education program"--are very much a part of the ComField model. The adaptive-corrective mechanism of the model is designed to serve this purpose.

Some additional relationships can be observed with other standards. The ComField model provides for the minium of one-third time available for general studies by making provisions for continued study in the general studies area beyond the underclass level. However, the model does not "provide specifications for the general studies phase." The general studies would not be considered a component of the program model yet it has a very functional relationship to the professional program described in the model. The Entry Behaviors would give some guidelines to the selection of educational experiences in the general studies but only in a very indirect way.

"Applies specific criteria for admission to teacher education programs; these criteria require the use of both objective and subjective data." The Entry Behaviors determined upon entrance into the program model serve this purpose as well as criteria for determining and directing the individual student's instructional program, particularly in the Foundations phase.

"Members of the teacher education faculty have continuing association and involvement with elementary schools." This kind of involvement is very much a part of a ComField-based program. However, the nature of this relationship is not described in any detail. The intent is that the public school people will assume a major role in the education of prospective teachers during the Practicum phase of the program. In that the developers see provisions for training of supervisors as a part of implementation of the program, and that provisions for children to be used in the Laboratory phase be arranged, the working relationship between the public school personnel and the college faculty may be limited. It appears that the program developers would envision changing the elementary school, school personnel, and their competencies by an indirect route; i.e., preparation of more competent personnel to assume instructional roles in the public school.

APPENDIX A

(taken from the Phase I proposal)

The Conceptual Framework Underlying the Model

Ten propositions provided the base from which the model was developed. These were:

1. That the objectives of a teacher education program should be specified in terms of the competencies needed by teachers to bring about the outcomes desired in pupils
2. That overt behavior acceptable as evidence of given teaching competencies should be specified
3. That systems design principles should be used in the development of instructional experiences to bring about the mastery of teaching competencies
4. That there should be evidence that professional competencies are integrated into a unique and personal "teaching style," and that a student should be able to be provided a rationale for the application of that style in any given situation
5. That the desired teaching competencies should be demonstrated under laboratory conditions prior to the assumption of supervised responsibility for the learning of children in the schools, and that they should be demonstrated to criterion under classroom conditions prior to assuming full responsibility
6. That the instructional experiences that lead to both the development and personalization of competencies should be individualized with respect to point of entry into the curriculum, pacing, sequencing, information processing preferences, etc.
7. That cost/benefit data should be provided on all aspects of such a program
8. That an adaptive mechanism should be developed to insure the continuous modification of such a program in light of evidence as to its cost, effectiveness, and appropriateness
9. That a computer-based information management system should be used so as to effectively meet the frequent and diverse demands for information within such a program
10. That a model should be developed for the management or execution of such a program that insures as far as possible that it reach the objectives set for it

APPENDIX B

(taken from Phase I Proposal)

A conceptual framework which summarizes the major blocks of content within the ComField instructional program[1]

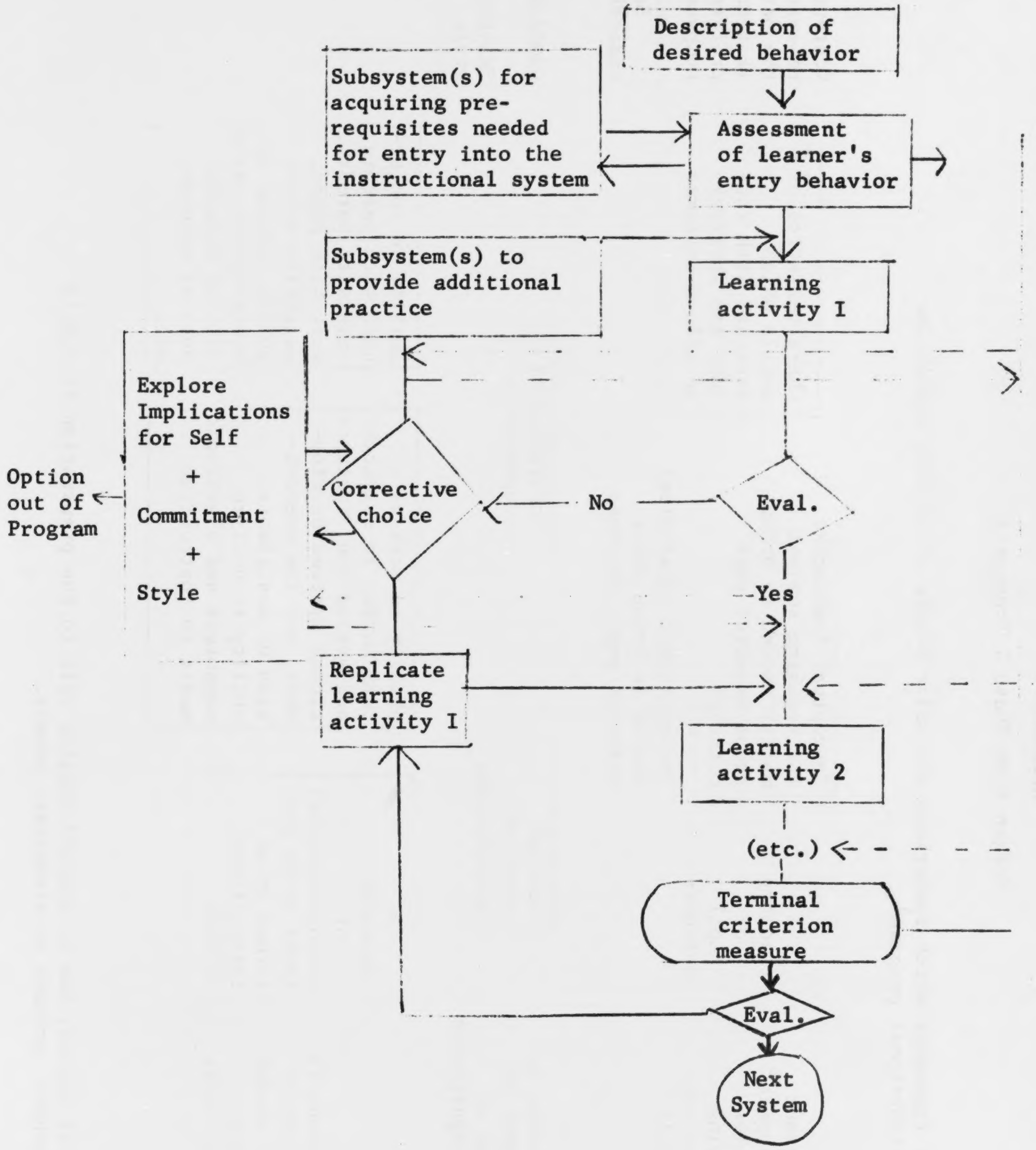
Content relevant to the development of competencies needed to bring about desired outcomes in pupils	A taxonomy of pupil outcomes	Conceptual frameworks for teaching subject matter needed to bring about selected pupil outcomes Instructional strategies needed to bring about selected pupil outcomes	Characteristics of pupils which interact with content and strategy to effect outcomes	Content relevant to the personalization of professional competencies Self understanding
Content relevant to the development of interpersonal or enhancing competencies	General adaptive competencies		Interpersonal competencies	Commitment Teaching Style
Content relevant to the development of competencies needed to perform noninstructional tasks	A taxonomy of noninstructional tasks to be performed by an instructional manager	Ability to work as a team member in research and evaluation, instructional systems development, and the supervision of assistants; ability to utilize computers and electronic media in instruction	Ability to conference with parents, work with parents, work with peers, establish school policy, pursue administrative tasks such as maintenance of records, etc.	

---

[1] All blocks of content can be adapted equally well to the preparation of I.M.'s at the preschool, primary or elementary levels.

APPENDIX C

(taken from Phase I Proposal)


Description of desired behavior
Subsystem(s) for acquiring pre-requisites needed for entry into the instructional system
Assessment of learner's entry behavior
Subsystem(s) to provide additional practice
Learning activity I
Explore Implications for Self + Commitment + Style
Option out of Program
Corrective choice
No
Eval.
Yes
Replicate learning activity I
Learning activity 2
(etc.)
Terminal criterion measure
Eval.
Next System

The process by which a student progresses through an instructional system that is designed to bring about the mastery and personalization of professional competencies.

APPENDIX D

(taken from Phase I Proposal)

A conceptual framework for summarizing the organization of the major blocks of content within the ComField instructional model

GENERAL EDUCATION	PROFESSIONAL EDUCATION				CAREER TEACHING
	Foundations-Laboratory Phase			Practicum Phase	
Knowledge prerequisite to successful performance in the Foundations-Laboratory Phase of ComField	Mastery of repertoires of knowledge essential to the performance of the teaching act	Mastery of repertoires of knowledge dealing with the elements and strategies of the teaching act	Demonstration of competencies which bring about desired learning outcomes in children	Demonstration of competencies which bring about desired learning outcomes in children	Knowledge prerequisite to successful performance as a supervising teacher in the Practicum Phase of ComField
				Demonstration of competencies which lead to the successful performance of noninstructional tasks	
	Mastery of repertoires of knowledge essential to the performance of general adaptive and interpersonal skills		Demonstration of competence in the performance of general adaptive and interpersonal skills	Demonstration of competence in the performance of general adaptive and interpersonal skills	
	Mastery of repertoires of knowledge essential to the development of self-understanding, commitment, and a perferred teaching style		Demonstration of behavior acceptable as evidence of self-understanding, commitment, and a preferred teaching style	Demonstration of behavior acceptable as evidence of self-understanding, commitment, and a preferred teaching style	

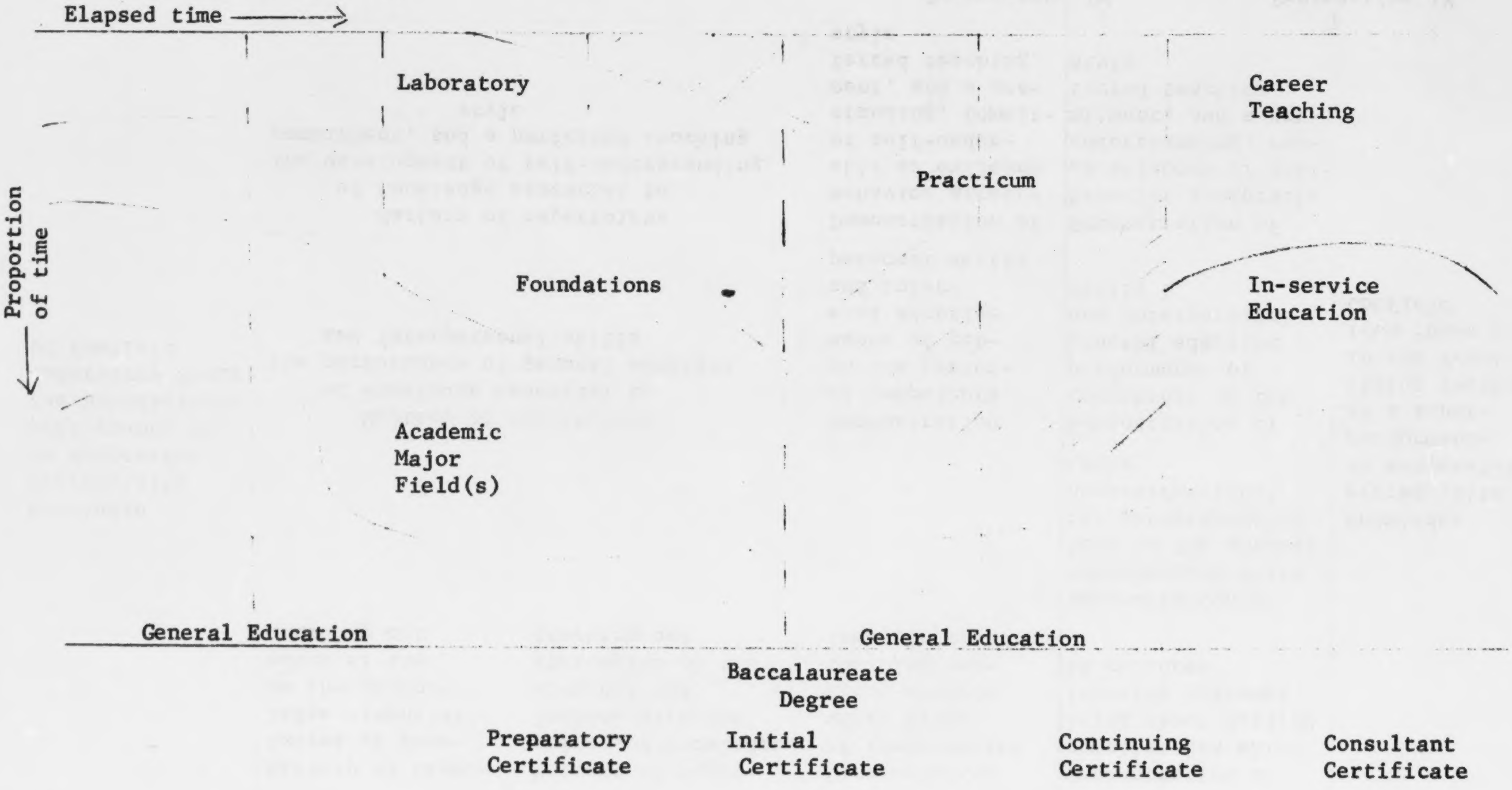
Prospective IM meets program entry requirements

Prospective IM meets performance requirements for exit from the Foundations-Laboratory Phase

Prospective IM meets performance requirements for exit from the Practicum Phase

APPENDIX E

(taken from Phase I Proposal)


Elapsed time
Proportion of time
Laboratory
Foundations
Academic Major Field(s)
General Education
Practicum
Career Teaching
In-service Education
General Education
Baccalaureate Degree
Preparatory Certificate
Initial Certificate
Continuing Certificate
Consultant Certificate

A proportional representation of time spent in the phases of professional development against elapsed time.

THE OHIO CONSORTIUM PROGRAM MODEL

Analysis by Marlin Languis

RATIONALE

The rationale of the program model reflects two broad statements accepted by the model builders.

The first statement is a set of goals for elementary schools prepared by the Committee on Quality Education of the Pennsylvania State Board of Education. The statement is printed below.

I. Each teacher should be prepared to employ teacher behaviors which will help every child acquire the greatest possible understanding of himself and an appreciation of his worthiness as a member of society.

> "Self-understanding should increase as the child matures. That is, he should become increasingly aware of his strengths and weaknesses, his values and interests, and aspirations, so that the decisions he makes about his educational occupational future will be informed, reasonable, and rational. He should be helped to know the strengths in himself that he should exploit and the weaknesses that he should try to overcome or that he must learn to live with.
>
> On the other hand, regardless of the level and pattern of his particular talents, the school experience should be such that it will strengthen, not damage, his self-esteem. The school should be operated in such a way that children at all levels of talent can achieve a growing awareness of their worth as persons in a society that claims to have an equality of concern for all its members."

II. Each teacher should be prepared to employ teacher behaviors which will help every child acquire understanding and appreciation of persons belong to social, cultural, and ethnic groups different from his own.

> "The school experience should be such that the child will learn to respect and achieve an easy interaction with children who differ from him in physical characteristics (e.g. skin color), speech, and degree of intellectual competence."

III. Each teacher should be prepared to employ teacher behaviors which will help every child acquire to the fullest extent possible for him mastery of the basic skills in the use of words and numbers.

"These basic skills fall into four broad categories: (1) the ability to acquire ideas through reading and listening, (2) the ability to communicate ideas through writing and speaking, (3) the ability to handle mathematical operations, and (4) the ability to reason logically and to respect evidence. The level of performance that can be reasonably expected in each of these areas will vary from child to child. However, since a civilized society depends crucially upon the verbal and mathematical literacy of its members, it is of profound importance that the level of expectation in these matters for any child shall not be underestimated or regarded as fixed and that every effort be made to give him the mastery he needs to function effectively."

IV. Each teacher should be prepared to employ teacher behaviors which will help every child acquire a positive attitude toward school and toward the learning process.

"The school experience should be such that the child finds the learning activities associated with it enjoyable and rewarding to the point that he is motivated to do well and to continue learning on his own initiative beyond the requirements of formal education. Everything possible should be done to ensure that the attitude of the teacher, the atmosphere of the school, and its physical condition shall contribute toward this end, so that the individual, both as a child and later as an adult, will hold education high among his values."

V. Each teacher should be prepared to employ teacher behaviors which will help every child acquire the habits and attitudes associated with responsible citizenship.

"Of first importance among such habits and attitudes are (1) loyalty to the fundamental principles of a free democratic society as expressed through a readiness to defend its institutions, to bring rational criticism to bear on their defects, and to work for changes leading to their improvement; (2) effective participation in group activities by assuming the role of a leader or a follower as appropriate; (3) appreciation and acceptance of the necessity for earning a living, (4) acceptance of the basic ethical values that make group living possible--values characterized by such terms as honesty, fair dealing, and compassion for theless fortunate."

VI. Each teacher should be prepared to employ teacher behaviors which will help every child acquire good health habits and an understanding of the conditions necessary for the maintenance of physical and emotional well-being.

"In his own interest as well as in the interest of society at large, a child should know how to take care of himself and how to keep himself physically fit. He should know what the requirements are for physical and mental health and what practices, harmful to health, should be avoided. Mere knowledge of these matters, however, is not sufficient. In cases where the home has been deficient in encouraging the child to practice sound health habits, the school has an obligation to be aware of the situation and to see that opportunity for remedying the deficiency is provided."

VII. Each teacher should be prepared to employ teacher behaviors which will help every child acquire opportunity and encouragement to be creative in one or more fields of endeavor.

"The notion of creativity has been variously defined. It is being used here to encompass worthwhile activities that a child initiates and pursues on hiw own--activities having an outcome that is perceived by the child himself and by others as a contribution to some part of his world. Such activities can be included in a wide variety of fields, not only the sciences and the arts but also the organization of human affairs and the development and exercise of salable skills in the production of any of a host of practical things that enrich our way of living."

VIII. Each teacher should be prepared to employ teacher behaviors which will help every child understand the opportunities open to him for preparing himself for a productive life and should enable him to take full advantage of these opportunities.

"This goal implies that most children can profit from some form of education beyond high school, whether it be at a four-year college, a school of nursing, a community college, a technical institute, or the like. The youngster should be aware of these opportunities and seek out the particular kind of education best suited to his talents and interests. The goal also implies that the school will provide the child with the kind of guidance that will enable him to do so.

"Furthermore, the school should help him discover the practically unlimited possibilities for continuing self-development both in the world of work and in the world of the mind so that he will be motivated to pursue excellence in all the forms of human endeavor that are appropriate for him."

IX. Each teacher should be prepared to employ teacher behaviors which will help every child understand and appreciate as much as he can of human achievement in the natural sciences,the social sciences, the humanities, and the arts.

"Insofar as possible, every child should gain from his school experience an increasing openness to the life of the mind and an increasing ability to find meaning for his own life in the heritage of the past and in the intellectual thrusts of the present age. He should achieve some understanding of the transforming conceptions of modern science. He should achieve increasing mastery over the basic principles of social and psychological sciences. He should develop a degree of sensitivity that enables him to differentiate the worthy from the worthless in the multifarious products of civilization as we know it--books, motion pictures, radio, television, music, and the visual and performing arts, architecture, industrial design, and the like."

X. Each teacher should be prepared to employ teacher behaviors which help every child to prepare for a world of rapid change and unforseeable demands in which continuing education throughout his adult life should be a normal expectation.

"The explosion in knowledge, the impact of science on the economy, the almost unpredictable nature of the job market for both the short term and the long term, the increase in opportunitity for leisure-time activities--all these developments make it apparent that education, if it is to fulfill the life-long needs of the individual and the future needs of society, cannot stop at grade 12 or grade 14 or grade 16. Such continuing education may take many forms: it may be self-education, it may be formally organized retraining, it may be adult classes of a recreational nature. Whatever the form, it must be regarded as an essential of an individual's activity through his adult life if he is to keep up to date as a worker, as a citizen, and as a person."

The second statement is a list of changing conditions and directions in American schools. Don Davies articulated the list in an address to members of the American Association of Colleges of Teacher Education, School for Executives at the meeting of the association in Ashland, Oregon on August 22, 1968. The list of changing conditions is printed below.

1. Moving from a mass approach to an individual approach in education.

2. Moving from an emphasis on memorizing to an emphasis on learning how to think, how to learn, as well as an emphasis on thenon-cognitive, non-intellectual components of life.

3. Moving from a concept of a school isolated from the community to a concept of a school that is in and of the community.

4. Moving from a fear of technology to utilizing machinery and technology for educational purposes.

5. Moving from a negative to a positive attitude toward children who are different.

6. Moving from a provincial perspective of the world and education to a multi-cultural perspective.

7. Moving from a system characterized by academic snobbery to one which recognizes and nurtures a wide variety of talents and fields.

8. Moving from a system based on serving time to one which emphasizes performance.

The rationale for the program model proceeds from the two broad statements presented above. It is easily understood when it is considered in three parts and a set of related assumptions.

First, the program model is based upon the pervasive concern of the model builders thatnew programs of teacher education must accommodate the forces of change and that existing plans of teacher education are not adequate to train teachers for changing conditions in American schools. The model builders took the position that existing plans were not to be considered as models or limitations in the program model. As a result local or national teacher education traditions are not maintained in the program model. For example, the concept of teacher education for the self-contained classroom and the graded school has been abandoned in favor of the multi-unit school and the team teaching concept developed by the Wisconsin Research and Development Center for Cognitive Learning.

Second, the model builders believe there are five major forces of change in American schools, The forces of change, called "contexts," in the program model are (1) instructional organization, (2) educational technology, (3) contemporary learning-teaching process, (4) societal factors, and (5) research.

Third, the model builders felt that a teacher education program must be comprehensive in scope. Therefore, they decided to include teacher education components for six target populations of educational personnel who are actively involved in the education, industion, and support of new teachers: (1) pre-service pre-school and kindergarten teachers, (2) pre-service elementary teachers (grades 1-8), (3) all levels of in-service teachers, (4) college and university teachers of teachers, (5) administrative personnel (principals and supervisors), and (6) supportive personnel (paraprofessionals and teacher aides).

The following assumptions, taken from the model, underlie and further define the rationale for the program model:

1. We assume that instruction in the elementary school will not be limited to traditional group activities but that individually guided instruction or a program of individualization will be further developed. It is essential for teachers to have preparation and proficiency in dealing with such programs.

2. We feel that the pre-school teacher needs to be more generally prepared in the subject matter of elementary education but that the elementary teacher must have basic teaching competence in the fields of language arts (reading), social studies, mathematics, and science with specialization in one of these fields of study. Unlike the pre-school teacher, the elementary teacher would not have preparation, as is the case presently, as a generalist.

3. We feel that the rapid development of educational technology and related materials for instruction needs a similar concentrated effort to train teachers accordingly. There has been insufficient use of the products of educational technology in schools and better uses of television, computers, and other hardware or software products will find increasingly more usage in elementary classrooms when teacher training involves a full consideration of educational technology.

4. There now exists a great deal of information about the learning-teaching process which is not being effectively incorporated into teacher training programs. The development and use of behavioral objectives in our specifications puts the emphasis upon the outcome, behavior, and overt operational procedures by which specific behavior can be elicited. Teacher education programs and teaching needs more of this orientation while still continuing a healthy respect for the developmental point of view.

5. We know by this time that teachers must be keenly aware of cultural differences which may be external to but, nevertheless, have an effect upon the educational setting. The training of teachers with primarily a single, middle-class orientation to the learner is no longer relevant in our multi-cultured, dynamic society. Students must be inculcated with a degree of cultural relativism which obviously involves less emphasis on traditional foundation of education courses. A teacher education program for tomorrow must put considerable experimental effort toward helping all teachers deal effectively with cultural and societal factors.

6. We have blithely ignored most of the research in teacher education and relied upon philosophical assumptions and historical events to arrange teacher education programs. The time has come for teachers to become classroom researchers, to pay more attention to the research on teacher characteristics, and to become adept in assessing and evaluating teaching behavior and style. Research on cross-cultural and cross-national teacher characteristics suggests necessary personal and teaching experiences abroad which will help develop within teachers a world point-of-view on man and society. An emphasis on research related to teacher education is involved in our desire to extend the knowledge and vision of teachers about themselves and teaching.

7. The basic approach to training teachers will be through a multi-activity type program that emphasizes the combination approach of work and study, practicum and experience, and content and training. The traditional reliance on college course work separated from or accompanied by limited experience is not the program suggested by the Ohio model.

8. There will be considerable involvement ofpublic schools as the physical facility for a considerable part of teacher education. Training colleges or universities and public schools will put forth a continuous cooperative and coordinated effort.

9. It is assumed that selection criteria will apply to pre-service programs developed from the Ohio specifications but in-service programs of any type, public school or college, will be applicable to present populations serving in these institutions. However, selective retention and dropout are not precluded after entry to any program.

10. A number of assumptions are apparent relative to college and university personnel. The development of the model program will begin with this population, for considerable re-education and training is necessary. Obviously, more work in research and development and technology will be required as program implementation begins. Traditional departmental organizations and within-college structures will require modification, as it is assumed that a new program should have an operational structure fitted to it and not attempt to adjust the model to existing organizational patterns.

11. It is assumed that the length of teacher education programs based on the Ohio specifications will vary considerably with the type and implementation of any specific program. The present pre service structure of four years can be used as a starting point, but the specifications are flexible so that deviations can occur from traditional time schedules. We do not assume any particular academic degrees to be awarded with the specifications as this is left to the implementing institution as its option. We do assume that the pre-service teacher prepared according to our model will participate in a program of continuing education after entry into the teaching profession. Finally, we assume that the length of time any candidate remains in a training program is totally dependent on the capacity and ability of the individual to meet program requirements.

Before accepting the Pennsylvania goals statement, cited earlier, the model builders considered goals statements from forty-four university catalogues and twelve reports of in-service education. They judged these sources of goals to be disappointing, inappropriate, and too general for the "change oriented" rationale of the program model, particularly because evaluation of program model goals was envisioned in behavioral terms. The model builders then selected the Pennsylvania goals statement on an a-priori basis and submitted it to the Steering Committee of the Consortium and to other Consortium members selected for the purpose of goal legitimation or alteration. The goals statement was enthusiastically endorsed. The model builders recognized the desirability of a scholarly and systematic approach to attain goals for a program model, but chose the procedure reported above instead, because of reported constraints of time, finance, and personnel.

Basic to the development of educational specifications is the conceptual design of the program model. The conceptual design illustrated diagrammatically in Figure 1 has five distinct components: (1) Goals for the program model were established. (2) Next the goals were refined in terms of five

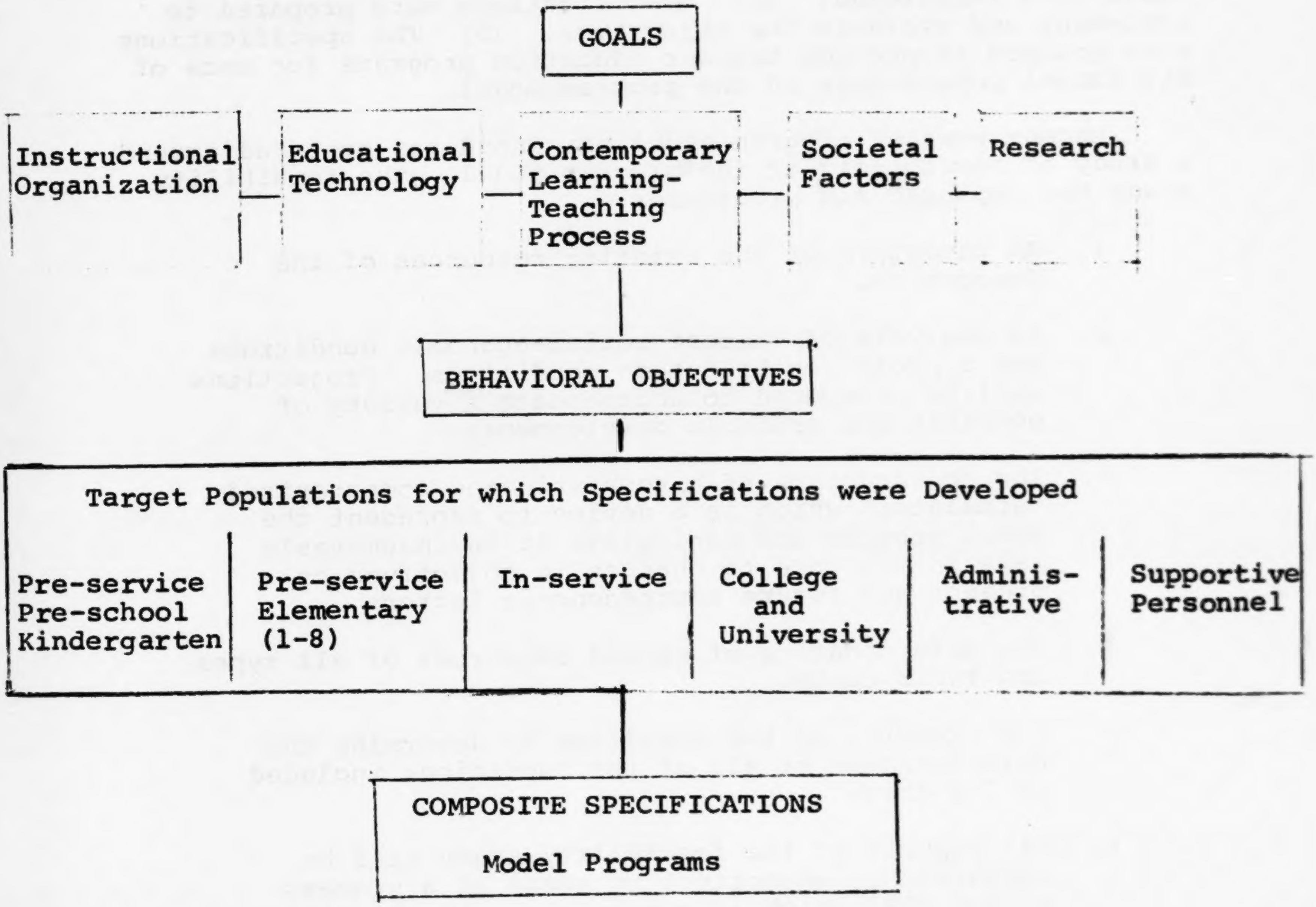

GOALS
Instructional Organization
Educational Technology
Contemporary Learning-Teaching Process
Societal Factors
Research
BEHAVIORAL OBJECTIVES
Target Populations for which Specifications were Developed
Pre-service Pre-school Kindergarten
Pre-service Elementary (1-8)
In-service
College and University
Adminis-trative
Supportive Personnel
COMPOSITE SPECIFICATIONS
Model Programs

Figure 1. Conceptual Design of Ohio Consortium Program Model

contexts representing sources of changes in teacher education. (3) From these contexts behavioral objectives for the program model were formulated. (4) Specifications were prepared to implement and evaluate the objectives. (5) The specifications were grouped to provide teacher education programs for each of six target populations in the program model.

Recent work of program model personnel has centered around a study of feasibility of the program model. The feasibility study has employed six procedures.

1. An inventory of the existing resources of the Consortium.
2. An analysis of current social-economic conditions and a projector of future conditions. Projections will be prepared to accomoodate a variety of possible and probable developments.
3. The construction of a sophisticated computerized "simulator" which is a device to represent the model program and manipulate it in innumerable ways in response to changes in objectives or present and future socioeconomic factors.
4. The determination of needed resources of all types and their costs.
5. The exercise of the simulator to determine the relationships of all of the conditions included in 1-4 above.
6. All aspects of the feasibility study will be organized by objectives by means of a process called PPBS which is compatible with the simulator mentioned in 3 above.

The final phase of the project, implementation of the program model, lies in the future.

An a-priori posture exists in the program model rationale in two significant ways. First, the a-priori acceptance of the two statements discussed in the preceding paragraphs as a basis for a rationale for a program model is akin to adoption as compared with conception and gestation. Second, the selection and definition of the five contexts also took place largely on an a-priori basis. Evidently, relatively little logical constraint was applied to this part of developing the program model rationale. The model builders simply state that the five contexts represent the more important sources of change in American education today, that an authority in each area was selected to define each context in a position paper, and that other knowledgeable persons were asked to react to them. The importance of the five contexts, and even more importantly the selection of five persons who defined the contexts by presenting the position papers on them, is fundamental to the content and organization of the program model. The behavioral objectives, the 818 educational specifications, and the program for each of the six target populations all proceed directly from the rationale statements and their refinement in the five contexts.

Therefore, it must be concluded that the program model is based less upon a defined philosophy of elementary education than it is upon an organizational plan for a "change adaptive" elementary teacher education program. No value judgment is intended in the preceding sentence. However, several questions are raised. How deeply involved were the Consortium members in building the rationale for the program model? Was the rationale in part pre-determined by the programmatic predispositions of the model builders? For example, was the decision to abandon the traditional self-contained elementary school in favor of the multi-unit school based upon a need for an organizational structure that was recognized after the broad goals of the program were defined, or was the conception of the multi-unit school a determinant of some directions taken in the program model? Is the program model consistent with its rationale? Is building a program model to accommodate forces of change in American schools and society an adequate base for the education of children? Have we no more fundamental commitments to American youth than to respond to current changes in the cultural milieu of the nation?

COMPONENTS

Components of the program model differ from those of several other model elementary teacher education programs. They are not specified in terms of general or professional education, field or campus experiences in the usual sense, time, or sequence. Instead, the program model provides components in the form of 818 composite specifications that comprise a comprehensive "pool" of teacher education prescriptions. Specifications can be drawn from the pool for a teacher education program for each of the six target populations in the program model, but specifications may also be drawn from the pool that meet the needs and goals peculiar to a given institution, program, or region. Thus the program model specifications are a resource for the development of many programs of teacher education.

Components of the program model are best understood by considering the process by which the specifications were developed and the characteristics of the completed specifications.

From the input of the individuals who presented the papers defining the five contexts (instructional organization, educational technology, contemporary learning-teaching process, societal factors, and research) and other Consortium personnel, an independent agency in Albuquerque, New Mexico (EVCO) prepared 2,123 behavioral objectives for the program model. Considering six target populations concerned with elementary education (pre-school and kindergarten teachers, elementary teachers grades 1-8, in-service teachers, college and university personnel, administrative personnel, and supportive personnel), the model builders formulated 818 educational specifications to implement the entire range of behavioral objectives.

The content of the programmatic components of the program model is outlined into major subject headings and topics for each of the five contexts. Educational specifications have been prepared for each topic. The outline for the context of Instructional Organization is printed below. The outlines for the other four contexts are similar in detail and scope.

CONTEXT--INSTRUCTIONAL ORGANIZATION

Major Subject Areas:

1. Necessary Training for Instruction
   Topics:
   1. General Education
   2. Curriculum Development and Evaluation
   3. Academic Disciplines and Skills--Methodology
   4. Evaluation Techniques for Multisized Group Instruction
   5. Curriculum Techniques for Multisized Group Instruction
   6. The Administration of Individually Guided Instruction
   7. Internship
2. Necessary Training for Research and Development
   Topics:
   1. Types of Research and Formulation of Problem Statement and Hypotheses
   2. Experimental Design and Implementation
   3. Statistical Analysis of Experimental Data and Interpretation of Results
   4. Testing and Development
   5. Development-Based Research

3. Multiunit Organization and Individually Guided Education
   Topics: 1. The Context of American Public Education
   2. Organizational Structure and Functions
   3. Roles and Responsibilities
   4. Combination: Organizational Structure and Functions--Roles and Responsibilities
   5. Basic Pattern of the Multiunit Elementary School
   6. Pupil Behavior
   7. Qualifications of the Teacher Aide
   8. Functions of the Teacher Aide
   9. The Role of the Parent
   10. Organization of the Environment

Each education specification is coded on IBM cards and consists of:

1. A listing of behavioral objectives with five parts
   - a. The context
   - b. Major subject area
   - c. The topic(s) covered
   - d. The target population(s) for which the specification may be used
   - e. The statement of the behavioral objective(s)

2. The treatment (procedures) to be utilized in meeting the objective(s)

3. The materials needed

4. The evaluation procedures to be employed to determine whether the objectives have been achieved

A complete model teacher education program exists for each of the six target populations. In the table reproduced below the number of specifications is listed for each target population in each of the five contexts.

SUMMARY OF COMPOSITE SPECIFICATIONS FOR
SIX TARGET POPULATIONS BY CONTEXT

Target	Instruct. Organ.	Educ. Tech.	Learning-Teaching	Societal Factors	Research	Total
Pre-school	157	60	102	74	67	460
Elementary	151	75	102	69	67	464
In-service	144	85	113	91	77	510
College & University	79	93	96	65	116	449
Administrative	62	70	103	126	77	438
Supportive	22	71	-	28	-	121

OUTCOMES

The outcomes of the program model are appropriately prepared personnel for each of the following target populations:

1. Pre-service pre-school and kindergarten teachers
2. Pre-service elementary teachers (grades 1-8)
3. In-service teachers (all levels)
4. College and university teachers of teachers
5. Administrators--principals and elementary education (not content area) supervisors
6. Supportive personnel--paraprofessionals and teacher aides

Outcomes of the program are analyzed in the following paragraphs in terms of emphases in the specifications for each target population.

Specifications for preparing pre-service pre-school and kindergarten teachers are drawn heavily from three contexts: instructional organization, contemporary learning-teaching process, and societal factors. These teachers are prepared (1) to teach in teams in a multi-unit school; (2) to work in a highly individualized manner with pupils; and (3) to emphasize "learning by discovery." The model builders feel that to teach pre-school pupils to "discover" requires inclusion of some content from mathematics, science, social studies, and language arts in the curriculum. However, the pre-school and kindergarten teacher is prepared as a generalist, not a specialist in a single elementary school content area: (4) to develop strength in both developmental and behavioristic psychology with stress on the cognitive domain, social learning, and basic behavioral operations; (5) to develop competence in working with parents and in building effective home-school relationships, and (6) to develop competence in professional self-analysis. The last emphasis includes experiences in assessing verbal and non-verbal teacher behavior and the importance of positive and negative teacher attitudes toward children. Flexibility is the key word in the preparation of pre-school and kindergarten teachers.

Specifications for preparing pre-service elementary teachers, grades 1-8, emphasize the contexts of instructional organization and contemporary learning-teaching process. Preparation for elementary teachers differs from that of pre-school and kindergarten teachers in several ways. The most distinct different is that elementary teachers are prepared as specialists in one of the content areas of the elementary curriculum (mathematics, science, social studies, and language arts) with a focus in that area and general skills and knowledge in the other three. Elementary teachers receive relatively little training in music, art, health, and physical education because other specialists in the multi-unit school are available for instruction in these areas. A guidance specialist is also employed to support elementary teachers in the multi-unit school. Thus the model builders placed less emphasis upon parent-school relationships for elementary teachers than for early childhood education personnel. In other aspects of the program, the preparation of elementary teachers and that of pre-school and kindergarten teachers are similar.

Specifications for in-service teachers indicate two types of training experience. First, because many in-service teachers will lack the competencies to be taught to pre-service teachers, virtually all of the specifications related to the two pre-service teacher target populations are included for in-service teachers. Some additional specifications have been prepared particularly for in-service teachers. Thus the program for in-service teachers is comprehensive and extensive.

Specifications for college and university personnel place strong emphasis on the contexts of research (including research methods), educational technology, and contemporary learning-teaching process. Research competencies are required particularly in the areas of teacher behavior, teacher characteristics, teacher education practices, media, and innovation. Many elementary education college and university personnel have a strong child development background but lack strength in the areas of the cognitive domain, affective domain, basic behavioral operations, social learning, and contingency management. Therefore, these areas are emphasized in the specifications for this population. Similarly, emphasis in educational technology focuses upon competencies lacking in the original preparation of most college and university personnel such as mediated instruction, programed instruction, computer assisted instruction, games, simulation, and microteaching. The model builders suggest that specifications for this target population might be employed to develop graduate programs for prospective college and university personnel.

Specifications for administrative personnel emphasize the administrator's role as instructional leader as principal of the multi-unit school. He would be required to hold a bachelor's degree and be a practicing or prospective elementary school principal in order to be admitted to the program. Over fifty per cent of the total number of specifications apply to administrative personnel. The model builders do not prescribe whether or not a graduate degree would accompany the program for administrators but suggest that much of the program should be applicable to advanced degrees in education.

Specifications for supportive personnel emphasize the role of these individuals in working in cooperation with all the members of the professional staff in the multi-unit school. Therefore, specifications are provided in three contexts: instructional organization, societal factors, and educational technology.

INSTRUCTIONAL TECHNIQUES AND PROCESSES

Instructional techniques in the program model are similar across the six target populations but differ in emphasis.

In general, instructional techniques employed in the program model mirror those which the elementary education personnel will themselves employ in interacting with pupils and professional peers. Considerable emphasis is placed upon such instructional techniques as flexibility, cooperative effort and teaming, individualization of instruction, personalized modes of instruction, and use of instructional technology. The model builders point out that the treatments (instructional techniques) suggested in the specifications are one approach but not the only approach by which the prescribed behavioral objectives may be achieved.

A list of types of treatments included in the program model is presented here.

1. Cooperative activity (included--planning, developing, evaluating, organizing, consulting, exchanging)
2. Demonstration (included--exhibiting, constructing, modeling, applying, drawing-painting)
3. Direct experience (included--discovery, experimentation, investigation-exploration, microteaching, laboratory, which includes many "student teaching type" experiences and internship)
4. Discussion (included--questioning, describing, reciting, panel-symposium)
5. Individual study (included--reading, individual assignment, drill)
6. Observation (included--field trips, video-taping, interviewing, measuring, testing, recording)
7. Simulation (included--contrived experience, role-playing, dramatization, reconstructing)
8. Skill development (included--writing, symbolizing, verbalizing, summarizing, generalizing, operation of equipment)
9. Telling (included--lecture, speech-address, reporting, storytelling)

ROLE OF THE TEACHER EDUCATOR

In the program model the role of the teacher educator is performed not only by college and university teachers of teachers but also by in-service teachers and administrative personnel. The shared dimensions of the role of teacher educators in the program model require that teacher educators have expertise in cooperating as members of a clinical teacher education team. However, details of the cooperative efforts of university and public school personnel are not completely spelled out in the program model.

Because experiences in the program model occur in and are built around principles of the multi-unit school, the role of teacher educators includes competence in fostering team teaching, subject matter specialization, individualization of instruction, and effective use of educational technology.

Most teacher education experiences occur in small groups or individually and over half of the activities involve some form of independent study. In addition, quite a number of experiences involve short-term contact with the teacher educator and concentrated study. Therefore, the role of the teacher educator will require a great deal of flexibility, ability to individualize, skill in quickly establishing a high level of interaction with students, and competence in diagnosing student needs.

Research on teacher behaviors, teacher characteristics, teacher education practices, and media and innovation is stressed. The concern is that teachers of teachers be prepared (1) to help their students assess and evaluate verbal and nonverbal behavior in the classroom, (2) to identify and respond to student's intellectual and personal characteristics and the influence of these factors on teaching effectiveness, and (3) to improve teacher education practices and experiences through research.

The teacher educator role of the in-service teacher in the program model centers around his ability to work effectively with students in the various field experiences of the program model. To fill this role the in-service teacher must possess competence in (1) teaching effectively within the multi-unit elementary school, (2) the methodology of the four basis areas of the elementary school curriculum, (3) child development and learning, and (4) understanding the social milieu of the school community. The teacher educator role of the in-service teacher will also involve building increased competence in utilization of instructional media.

Dimensions of the role of the teacher educator in the program model will require extensive retraining for both college and university personnel and in-service teachers.

EVALUATION TECHNIQUES

The process of evaluation is of prime importance because it not only guided the planning stage but also will serve to direct the implementation stage of the project. The evaluation model used was prepared by Professors Stufflebeam and Hammond of The Ohio State University. Themodel is referred to by the acronym CIPP suggesting the comprehensiveness and versatility of the model in dealing with evaluation of Context, Input, Process, and Product. A significant portion of project resources for the implementation phase of the program will be placed in the evaluation component.

In addition to the comprehensive effort referred to above regarding the CIPP model, it was necessary to utilize PERT (Program Evaluation Review Technique) as a type of internal check on meeting the various self-imposed deadlines necessitated by time limitations. This technique was used as the principal monitor of progress during the planning stage.

Evaluation of the program experiences is always provided in terms of the behavioral objectives for each specification and utilizes twelve evaluation techniques:

1. Conference
2. Cumulative records
3. Demonstration
4. Examination
5. Interview
6. Observation
7. Operation-Performance
8. Questionnaire techniques
9. Reports--oral and written
10. Sociometric techniques
11. Self-appraisal
12. Special assignments and exercises

RESPONSIVENESS TO SOCIETAL AND PROFESSIONAL NEEDS

The program model's strong emphasis on societal concerns is visible in the context of Societal Factors, which was considered by the model builders to be one of five important sources of change in American schools.

It should be noted that the program model tends to emphasize the development of elementary educational personnel who are competent in studying the socioeconomic context of the school and in understanding and responding positively to children who represent a diversity of background rather than focusing upon a particular group or type of pupils, such as the urban poor.

Another assumption underlying the specifications is that each teacher must be keenly aware of cultural differences that may be external to but, nonetheless, have an effect upon the educational setting. The generally traditional approach of training all teachers with a single, middle-class, highly structured orientation to the learner is no longer feasible in a multicultural and dynamic society. Therefore, the specifications put considerable emphasis on preparing the teacher to deal with cultural and societal factors that are extraneous to the usual classroom learning situation.

The program model is clearly responsive to several professional concerns. There is an emphasis on early childhood. Pre-school and kindergarten teachers are considered as one of the six distinct target populations. Emphasis on preparing teachers for instructing disadvantaged pupils is included within the specifications developed around the contexts of societal factors and educational technology. Emphasis upon individualization is found throughout the program model. Provision for extensive attention to in-service education is made through specifications developed for this target population. The multi-unit school concept, adopted at the outset of the development of the program model, provides for staff differentation in the roles of the principal, team leader, teachers, and supportive personnel. Similarly, the program model has a defined teacher education program for target populations of administrative personnel and supportive personnel. Professional concern regarding the effective and imaginative use of media is reflected in the program model in the inclusion of educational technology as one of the five contexts.

UNIQUE CONTRIBUTIONS

The program model is unique in its pervasive and overriding concern that teacher education accommodate forces of change in American schools to the near exclusion of other determinants of teacher education.

The program model is unique in its programmatic outcomes and in the range of personnel for which teacher education experiences are provided. Eight hundred eighteen educational specifications have been prepared and are applied to six target populations representing the comprehensive spectrum of personnel responsible for preparation, induction, and support of new teachers.

Perhaps the program model is most unique in its utility to groups whose needs and interests are found in parts but not all of the program model. To create programs for groups with such special purposes, it is necessary for the interested group to agree upon its general goals and specific objectives. These become the selection criteria used to draw out appropriate specifications from the program model. Such selection is possible because the specifications are efficiently coded and can be retrieved by context, target population, subject area, or topic. Thus the program model is highly versatile, flexible, and accessible. It can serve an infinite number of teacher education groups in program development.

An example of creating special purpose models is included in the program model report. A special program, Research Training for Teachers Conducting Research, was constructed by selecting ten topics and then extracting forty-nine specifications from three contexts of the program model. Such a program could be offered in an eight-week summer institute.

MODEL REVISION

Revision of the program model is inherent in the CIPP evaluation model (see Evaluation Techniques). A significant portion of the resources of the project will be devoted to evaluation and program revision during the implementation phase. Both evaluation and revision of planning, structuring, implementing, and recycling decisions as provided in the CIPP evaluation model are facilitated by the behavioral objectives provided in the specifications of the program model. The behavioral objectives serve to facilitate decisions about program model revision because they provide a mechanism for acquiring empirical data concerning the effectiveness of the program model experiences in meeting its stated purposes.

RELATIONSHIP TO GENERAL EDUCATION

The first specification states simply that general education requirements have been met. However, general education is not dealt with in the program model directly. Implications for general education are evident. One implication for general education results from the adoption of the multi-unit elementary school concept. Specifications in the subject area "Necessary Training for Instruction" of the context "Instructional Organization" prescribe that elementary teachers will have a specialization in one of the four academic disciplines: mathematics, science, language arts, social sciences. The specialization is not defined as a major or minor and the number of credits to be earned is not prescribed. Training in the specialization is prescribed to be a joint effort of college instructors representing the academic and professional disciplines.

FEASIBILITY

The program model is currently undergoing feasibility study by the model builders. While the report of the feasibility study is not available, economic considerations of implementing the program model have led the model builders to define several possible levels of program implementation from a very minimal level to a comprehensive level of program implementation.

It is necessary to consider several factors in determining the feasibility of the program model at an institution with a large elementary teacher education program. First, concepts of multi-unit school, team teaching, and specialization, require a philosophic commitment both of college and university personnel and cooperating public schools.

Extensive re-education of college and university personnel, administrative personnel, and in-service teachers is required in implementing the program model. Especially for the latter group, in-service teachers, who have prescriptive, on-the-job time and energy commitments, the feasibility of adequate re-education looms as a formidable task. The model builders suggest that the most urgently needed competencies of in-service teachers be identified according to local contingencies and be developed first.

The extensive performance and direct teaching experiences of the program model raise feasibility questions both in cost and logistics of implementing the program when a large number of elementary teachers in training is involved.

Perhaps the most encouraging factor in considering the feasibility of the program model is its flexibility and utility. Any group interested in using parts of the program model must first clearly define the goals of their program. Then it would be possible to extract the specifications that apply to the teacher education program of the implementing institution. The model builders recognize that there are some risks in extracting pieces of the program model for implementation, because the specifications have been prepared from a comprehensive teacher education design. However, the program model is clearly designed to facilitate such adaptation.

Perhaps the most pervasive deterrent to implementing the program model is the lack of congruence between the point of view of the program model and traditions of elementary education. The program model is ambitious and in many respects very different from most existing teacher education and public elementary school programs. For example, the self-contained classroom concept is deeply ingrained in the fabric of elementary teacher education and in public elementary schools. Also, the child development or child-centered orientation in elementary education traditionally is probably neither as visible nor as clearly emphasized in the program model as many elementary educators and teachers would wish.

Facilities at the college or university implementing the program model would require provision for computer assisted instruction and microteaching. In cooperating public schools, facilities to operate the multi-unit school would be required. In both cases remodeling would almost surely be involved.

While course structure and sequence are not identified directly in the specifications, modified courses or "methods of teaching modules" in the areas of science, mathematics, language arts (including reading), and social studies are provided in the specifications. It is possible that existing methods courses would require modification to implement the program model specifications. However, the content, behavioral objectives, and treatment in the specifications just mentioned really are quite traditional and do not strongly reflect current developments. For example, in the specifications dealing with science teaching, very minimal emphasis is given to recent curricular and methodological developments in elementary science education. Much more attention is warranted to content and methodology consistent with such programs as the following: Science: A Process Approach, the Elementary Science Study, the Science Curriculum Improvement Project, and guidelines from the National Science Teachers Association.

RELATIONSHIP TO RECOMMENDED STANDARDS IN TEACHER EDUCATION (NCATE)

Congruence of the program model with NCATE teacher education standards is analyzed according to the following sections of the standards: (1) curriculum--general studies and professional studies, (2) faculty, (3) students, and (4) evaluation.

The composite specifications of the program mode provide an overall picture of the teacher education program. However, a great deal of flexibility exists and many alternatives are available in the program model for those who will implement the program. A useful analogy involves comparing the program model to a collection of blocks (composite specifications) from which the teacher education program is to be constructed. Each block is an essential component of the completed teacher education structure. Some blocks are designed for use in a particular section of the program structure, but a good bit of flexibility exists in combining, or recombining and applying blocks to arrive at an operational structure. Moreover, the blocks themselves permit some modification of size and shape in terms of time, resources, sequence, and emphases placed upon them through treatments employed to reach specified behavioral objectives. Thus assessing congruence of the program model with NCATE standards at this point in time is a matter of inference in a number of sections of the program.

The general studies (general education) portion of the program model is analyzed in the section entitled Relationship to General Education.

Professional studies dealing with content for the teaching specialty of pre-school and kindergarten pre-service teachers is represented in approximately one-fourth of the 460 specifications provided for this target population. A similar portion of the 464 specifications for pre-service elementary teachers (grades 1-8) is devoted to content for the teaching specialty, elementary education. The specifications representing the teaching specialty deal with curriculum development and evaluation, methodology and skills in teaching academic disciplines, evaluation techniques for multi-sized group instruction, and various aspects of structure, organization, role, and responsibility in the multi-unit school.

Associated with the specifications discussed above for elementary teachers is the fact that the elementary teacher has a specialization in academic study in one of the four areas of the elementary curriculum: mathematics, science, social studies, or language arts.

Theoretical-practical content of the program model includes humanistic studies of education traditionally related to history and philosophy of education. These humanistic studies exist in specifications developed around the context, societal factors. Approximately two-thirds of the 74 specifications for pre-school and kindergarten teachers and a similar fraction of the 70 specifications for elementary teachers in the context, societal factors, deal with humanistic studies of education. Emphasis in the specifications lies heavily in understanding the "real world" of the school and society and the relation of the two institutions with respect to historical and philosophic issues.

Behavioral studies in theoretical-practical content of the program model are visible in 102 specifications in the context, contemporary learning-teaching process, forthe pre-school and kindergarten teachers and a like number of specifications in the same context for elementary teachers. To a degree the behavioral studies are also reflected in specifications developed from the contexts, research and societal factors, for both groups of teachers.

Much of the content of the teaching specialty is taught in the context of laboratory experiences in the program model. Thus the recommendations of the NCATE standards related to integrating the methods and the actual practice of teaching are amply met in the program model. Approximately twenty percent of all specifications for pre-service teachers involve direct teaching. In the direct teaching experiences the teacher trainee works with individual children or small groups of pupils in a variety of settings. Internship in the program model is discussed below. In addition to direct teaching experiences, other laboratory experiences (observation, demonstration, problem-solving projects, and other direct experiential activities) are heavily emphasized in the program model. Generally, experiences in the treatments provided in the specifications seem to imply the following sequence of types of experiences before direct teaching occurs: observation, telling, discussion, individual study, skill development, simulated activity, and demonstrations. Then direct contact with children follows. However, the pattern of experiences indicated in the preceding sentences can only be inferred from the specifications themselves and scattered comments made in the project report, because the sequence of specifications is not prescribed.

Study of teaching situations is included in provision for many oversations, microteaching, and a variety of simulation experiences that include contrived experiences, peer group teaching, role-playing, dramatization, and reconstructing.

Internship is provided in the program model for both pre-service teacher target populations, pre-school and kindergarten teachers and elementary teachers (grades 1-8). A full year internship in the multi-unit school is provided.

Attention is given in the program model to the competencies needed in the faculty that will implement the program. The model builders assume that because the program model differs considerably from what is and has been traditional in elementary education, many existing faculty members will lack some of the competencies required and that a program of re-education will be necessary. It is felt that re-education of college and university personnel will be both a continuing and a self-selecting process, that the extent of re-education will be an individual matter both in kind and duration, and that re-education experiences will usually take theform of workshops, short-term concentrated study situations, and individual study.

Faculty implementing the program model will work in an extremely close relationship with public elementary school personnel. A large number of experiences for students in the program model specifications occur in themulti-unit elementary school. In addition, college and university personnel frequently work in concert with in-service teachers in the field.

Selection and retention of students is given very little attention in the program model. Because students entering the program are expected to have completed general education requirements, it is likely that they will enter the program at approximately the beginning of the junior year. The model builders state that specific details of admission criteria are to be determined by the implementing institution. However, four general categories of admission criteria are listed: (1) health and physical vitality, (2) intellectual capacity and scholastic achievement, (3) interest in children and a desire to teach, and (4) a combination of personal-social-emotional qualities. Retention in the program is dependent upon the student's making normal progress in the completion of various phases of the program plus increasing evidence of growth in behaviors considered vital to teaching success. The model builders indicate that students may self-select themselves out of the program at various points.

The model builders espouse a commitment to individualize the teacher education program. They state thatmost teacher trainees will complete the program in the usual four years but that the time required to complete a specification of the program will differ for individuals. It is likely that the internship will extend the program to five years. The model program does not mandate that the treatments provided in the specifications are the only ones that may be utilized to achieve the stated behavioral objectives. Thus, by design, the rate of the student's progress through the program model is individualized; by a "permissive legislation" posture the route taken to achieve program objectives is individualized. However, only by choosing the program of one of the target populations is a student able to control in any way which of the behavioral objectives of the program model he must attain. Individualization is also evidenced in the program model in the utilization of independent study as a treatment (instructional technique) in nearly half of all the prescriptions included in the program model for both groups of pre-service teachers.

College and university personnel, in-service teachers, and administrators have responsibilities indicated in the specifications for guiding and evaluating the teaching performance of students. A strong emphasis in recording and describing teaching performance of students is placed upon self and peer group evaluation of teaching utilizing media such as the video-tape recorder. Other aspects of evaluation in the program model are discussed in the section entitled **Model Revision**.

THE UNIVERSITY OF PITTSBURGH PROGRAM MODEL

Analysis by Judith Morris

RATIONALE

In recent years projects to individualize instruction in the elementary school have emerged from the Learning Research and Development Center (LRDC) in Pittsburgh. The School of Education at the University of Pittsburgh has cooperated with LRDC in developing two of these programs--Individually Prescribed Instruction and Project PLAN. In the process, the education faculty realized that teachers have little foundation for decision-making in directing individual learning experiences.

Building on this discovery, the School of Education has designed a teacher preparation program to provide the knowledge, strategies, and directed encounters necessary for teachers to competently individualize instruction in the elementary school.

The program designers assumed that teachers would understand the process of individualization more fully and be more competent in their teaching if they experienced it themselves. Therefore, the Pittsburgh program model utilizes with the trainees the same principles and practices of individualized instruction that the teachers will subsequently use with pupils.

The program model defines individualized instruction as "planning and conducting, with each pupil, programs of study and day-to-day lessons that are tailor-made to suit his learning requirements and his characteristics as a learner."

COMPONENTS

The Pittsburgh program model lists five requirements that may be seen as components of the training program. The pivotal component is Teacher Competencies.

Teacher Competencies (Pittsburgh Requirement III)

Each teacher trainee must define and demonstrate successfully nine specific teaching tasks or functions in order to be certified. These nine competencies were identified by the program developers as essential for a teacher to individualize instruction. The designers made no claims, however, that these are the only competencies which are important. They urged that each implementing institution determine the competencies it considers essential.

The nine competencies identified by Pittsburgh are described below.

1. Specifying Learning Goals

   Specifies learning goals in terms of observable strengths and weaknesses.

2. Assessing Pupil Achievement of Learning Goals

   Analyzes initial learner capabilities in a curriculum area and evaluates pupil accomplishments regarding a variety of learning goals.

3. Diagnosing Learner Characteristics

   Develops refined observational skills, synthesizing techniques, and supporting references to improve appraisal of the learner.

4. Planning Long-Term and Short-Term Learning Programs with Pupils

   Plans, manages, directs, and evaluates programs of learning in cooperation with pupils.

5. Guiding Pupils in their Learning Tasks

   Gains awareness of pupil needs and familiarity with procedures through which these needs can best be met.

6. Directing Off-Task Pupil Behavior

   Develops systematic and analytical approaches to management of classroom behaviors.

7. Evaluating the Learner

   Evaluates progress to determine the movement of pupils through curricular areas.

8. Employing Teamwork with Colleagues

   Becomes aware of team processes of decision-making, operation, cooperation, leadership, and means of evaluation.

9. Enhancing Development

   Recognizes personal traits that affect learning and teaching.

The remaining four components provide knowledge and experience to assist the trainee in mastering the teacher competencies described above.

Academic Knowledge (Pittsburgh Requirement I)

There is a conceptual base requisite to the development and implementation of each of the nine teacher competencies. In the Academic Knowledge Component, three knowledge areas provide these concepts. First, through the Liberal Arts the trainee becomes familiar with general classification schemes, key concepts and principles, history and development, modes of inquiry and knowledge application, interdisciplinary relationships, and relevant materials in the humanities, communications, natural sciences, mathematics, and the arts. Secondly, in the Behavioral Sciences, the trainee obtains knowledge of theory and measures of human capacity, motivation theory, learning theories, personality theory, attitude and value development, functioning of informal and formal groups, intergroup differences, sources and resolution of prejudice, development of interpersonal relationships, and societal and cultural forces upon personality, capacity, and performance. Finally, the field of Social Science is used to develop an understanding of the school in society.

Professional Knowledge Base (Pittsburgh Requirement II)

The Professional Knowledge Base enables the trainee to (1) clarify, explain, and conceptualize the decision-making process employed in teaching; and (2) establish a system for modifying the decision-making process in such a way as to incorporate knowledge about human learning.

Through this component the trainee accumulates knowledge about current elementary curriculum. This is accomplished through interaction with professional organizations and school personnel, experience and observation in the school, and an opportunity to read pertinent materials and discuss them with peers, faculty, and other representatives of the teaching profession.

The objective of the Professional Knowledge Base requirement is tc develop within the graduate the skills and understanding necessary so that he will be able to introduce and implement the individualization of instruction into the traditional school system.

Guidance of Trainees (Pittsburgh Requirement IV)

The primary purpose of this component is to assist the trainee in the development of self-direction, awareness of self, and skill in working professionally with children and colleagues.

Small learning groups of eight or ten trainees are assigned to faculty advisors. A major emphasis in these groups is the refinement of group process skills and the enhancement of team activity, both essential to teaching in a school devoted to individual learning. In addition, the trainees assist one another through the program, either with advice or in small or larger working/studying teams as they deal with units. Teacher Competencies eight and nine are developed within the laboratory of the learning group.

Clinical Setting (Pittsburgh Requirement V)

The clinical setting is crucial to the development of teacher competencies and provides the scene for practical use of knowledge and experience gained through the other components.

The university will establish working relationships with school districts which value individualized instruction for their pupils and differentiated staff roles as a means to accomplish it. The clinical teaching staff will be selected by the school district and university partners. A teacher educator will work on the clinical staff with every four teachers. These five, assisted by two aides, will teach one hundred pupils and supervise approximately fifteen trainees in various stages of their clinical experience. In this setting, consistent models of exemplary behavior, techniques, materials, and evaluation would form the teacher education curriculum.

The clinical setting would serve three purposes: (1) individualized instruction for the pupils, (2) pre-service and in-service training, and (3) experimentation in teaching strategies and the development of new materials.

Within the clinical setting, the pre-service trainee tries out his skills in four different roles. These roles are described below.

Observor-Tutor. Successful participation in this role determines entrance into the program. Data are collected on the student's attitude, relationships with pupils, and performance as a tutor.

Student Teacher. One hundred per cent of his time is spent working with pupils to demonstrate his mastery of the nine teacher competencies. He will function as part of a team and will be supervised by clinical faculty members.

Assistant Teacher. The trainee will perform clerical tasks, will serve as a teacher aide, and will tutor, all within the context of team membership and clinical supervision.

Internship. The trainee will add to his other teaching responsibilities, communication with parents and curricular decisions.

These clinical roles will be performed throughout the training phase and in conjunction with work on the other components. The program model lists the pre-service clinical participation in four phases, but trainees will be scheduled in and out according to the need for experience identified by the clinical staff, the trainee's advisor, and learning group.

Experienced teachers will come to the clinical setting for retraining in team membership and differentiated teaching roles. Other deficiencies identified will be dealt with by the clinical staff within the clinical setting.

In summary, the program model designed by the University of Pittsburgh is consistent with its primary objective, individualization of instruction. The trainees participate in the planning of their own individual programs and work with other professionals in a team setting to individualize learning for pupils in an elementary school. Each component of the program model provides essential knowledge or practical experience for the development of the nine competencies pivotal for individualizing learning at the elementary level.

OUTCOMES

As a consequence of such training, it is assumed that the trainee will become confident and self-aware. He will be knowledgeable in the concepts, principles, procedures, and applications of the humanities, communication, natural sciences, mathematics, and the arts. He will relate well to children on an individual basis and diagnose, guide, and assess their learning effectively. He will be able to work with a team of professionals to individualize programs for elementary pupils and to develop materials for the improvement of the profession. The components sequentially move the trainee toward the attainment of these goals.

A second expected outcome of the implementation of the Pittsburgh program model is the establishment of a "new coalition" to develop dynamic programs in teacher education. This coalition will be among colleges, schools, teachers organizations, and state and federal agencies. Without such a partnership, the clinical settting will be an impossibility.

A third desired outcome is to expand the use of individualized instruction throughout the educational system. Within the Pittsburgh program model, individualized programs of instruction are implemented on the university and elementary school levels. It is hoped that pressure from both these levels will bring about the desired change within the secondary schools as well.

A fourth expectation is the increased use of team instruction and differentiated staffing in the schools.

A fifth prospect is greater cooperation among teacher education faculty members in developing, executing, and revising curriculum for their college. In order to implement this program model, it will be necessary for the faculty to completely evaluate their teacher training program and perhaps to design a new program which would fit into the components described above. It will be necessary for the faculty to decide if the teacher competencies, for example, actually represent their concepts of necessary skills and behaviors for a competent teacher in an individualized program. If not, they will need to determine the teacher competencies that more nearly represent their own idea of good teaching.

INSTRUCTIONAL TECHNIQUES AND PROCESSES

The Pittsburgh design is based on the assumption that individualized instruction is the most effective process for achieving quality education throughout the educational system. As noted above, one of the anticipated outcomes of the program model is an expanded use of individualized instruction in higher education. The implementation of this program model will facilitate the use of individualized instruction at the universities, since the teacher education faculties involved must master and use the individualized instructional mode represented by the teacher competencies required for the trainee: specifying learning goals, assessing student achievement of learning goals, diagnosing learner characteristics, planning long-term and short-term learning programs with students, guiding students with learning tasks, and evaluating learners.

This instructional mode allows the trainee to make regular progress toward mastery of the instructional content at his own rate. The trainee is actively involved in the learning process since he chooses the units he will study, the mode of learning by which he will attain his learning goal, the rapidity with which he will move toward this goal, and evaluates the quality of his mastery in particular areas. In all of these processes, the advisor and learning group give guidance and assistance.

Individualization of instruction demands a variety of learning modes. Modes of learning that can be employed singly or in combination include: (1) varying learning materials and equipment (e.g., reading, films, filmstrips, lecture and discussion, small group seminar); (2) varying the learning setting (e.g., independent study, pupil-team, tutoring by the teacher, small groups working without the teacher, small groups with the teacher, large groups); (3) varying instructional techniques (e.g., inquiry method, rote memorization and recitation); (4) assigning different students to different teachers; and (5) varying the rate of advancement through the curriculum.

The design values team teaching and differentiated staffing as the organizational means by which individualized learning can be most effectively implemented. The trainees are schooled in these cooperative techniques and receive experience in both within the clinical setting.

ROLE OF THE TEACHER EDUCATOR

The teacher educator performs three roles: curriculum designer, faculty advisor, and clinical team member.

Curriculum Designer. The teacher educator will decide with his colleagues the competencies essential to the development of an effective teacher for individualized learning in the elementary schools. Once these competencies are determined, the content of the units providing these knowledges and experiences must be designed and written, materials must be chosen, and instructional routes must be developed. Thus, one role of the teacher educator within the Pittsburgh design is that of curriculum development.

Faculty Advisor. The role of the teacher educator as an advisor to trainees begins with a review of a student's achievement during the liberal arts and observation sequences within the university. Using data, interviews, and placement tests, a faculty review panel determines the student's potential in the program and chooses an advisor for him or recommends that he not enter the program.

As an individual counselor, the teacher educator will advise individual students on revising goals, planning careers, solving professional and personal problems. In addition, the advisor will consult with a learning group of eight to ten trainees and assist them in the development of team skills, leadership roles, and group processes.

Advisors and clinical staff members will assist individual students in determining when he should participate in certain learning experiences both at the university and within the clinical setting.

Clinical Team Member. As a clinical team member, the teacher educator will evaluate the student participant as observer, tutor, assistant teacher, student teacher, and intern. Critiques of student performance will be placed in a book of clinical evidence with references to pertinent research that suggests another approach to the educational situation should be followed by the trainee.

In the clinical setting, the teacher educator will act as an advisor of students when identified deficiencies indicate that further experience in knowledge components or simulated exercises would be recommended. As a member of a professional team of teachers working with a class of pupils, the teacher educator will serve as a model of teacher-learner interaction. He will work with experienced teachers in teams for the purpose of training them in individualizing instruction and performing differentiated roles. In addition, he will participate in research on teaching in the elementary school and help prepare teaching materials resulting from this research.

EVALUATION TECHNIQUES

The most extensive evaluation of the trainees and of the program will take place in the clinical setting where realistic analyses of outcomes of the learning experiences can be most effectively handled.

The Pittsburgh program does not specify criteria for judging mastery of each trainee in each teacher competency. Neither written tests nor general effectiveness with children should determine whether a student is to be certified; rather, evidence of mastery of the teacher competencies in specified learning tasks within the clinical setting should be entered as primary evidence. Subjective judgments of the candidate's attitudes and rapport with children will provide supplementary information with which final decisions may be made. Thus, the implementing faculty must develop criteria for each competency prior to the initiation of the program.

The trainee's progress in the program will be continually assessed through the use of pre- and post-tests for each learning module. Progress in the development of team skills and growth in self-evaluation will be evaluated within the learning groups by peers and advisor.

The Pittsburgh program model provides a mechanism for continual feedback about the program from the clinical setting into the university planning system. The clinical staff, university faculty, and trainee actively collect data about clinical practices in the "logbook." Within this book, pupil, trainee, and faculty behaviors will be carefully recorded and later analyzed in relation to instructional theory cited by university or clinical faculty members. Continual failure in certain aspects of instruction would lead to a revision of the learning module providing the knowledge base for those learning tasks.

These are the formal mechanisms set up within the Pittsburgh design. In addition, the authors list in the report several sets of questions which the implementing institution might use in determining if the design they have developed will be viable.

RESPONSIVENESS TO SOCIETAL AND PROFESSIONAL NEEDS

The Pittsburgh design does not speak directly of preparing teachers to meet critical current societal needs. However, a basic assumption seems to be that individualization of instruction is the most propitious route for solving present societal problems. In the Preface, Dean Paul Masoner states, "This trend (toward individualization) in teacher education can lead to important developments in adapting elementary and secondary schools to community problems and in redesigning the schools in the metropolitan city."

As an example, the components of the program model provide excellent preparation for a teacher of the economically deprived child. The Professional Knowledge Component sensitizes the teacher to the types of school situations currently found in the United States and to the means by which change can be brought about in the system. The behavioral sciences requirement of the Academic Knowledge Component prepares the trainee to deal with learning problems and motivation, the development of personality and self-concept in children. These are invaluable preparations for a teacher of the economically disadvantaged child. The program model trains the prospective teacher in competencies that will enable him to teach well in any situation, since a concern for and ability to work with an individual student is an essential ingredient of good teaching.

Thus, the program model is general enough to provide essential training for teachers to meet a variety of needs in today's world.

The authors do identify and design for several professional needs, including the following: the relationship between research and practice; in-service education; differentiated staffing; relationship of the faculty of education to the public schools, professional organizations, state and federal educational agencies, and the liberal arts faculty of the universities.

"Clinical analysis" is a procedure for comparing clinical practice with related research designed by the Pittsburgh developers. Within the program model, faculty and trainees will collect data on pupil, faculty, and trainee behaviors within the clinical setting. The behaviors are described on three levels: sequence of the situation, instructional decision, and consequence. The clinical faculty reviews these descriptions for clarity, general applicability, and appropriateness as representative samples of the instructional model. Those descriptions selected are stored as clinical evidence.

In the prototype system, two educational researchers, in learning research and social psychology, will examine each description for its consonance-dissonance with evidence from laboratory research. If the practitioner's operation hypothesis is in conflict with research evidence, a critique is entered into the clinical evidence with a review of pertinent research and supporting arguments for the challenge. The critique would suggest a different hypothesis as a basis for decision-making in a similar instructional situation. The clinical setting would also provide opportunity for faculty and researchers to talk about these differences, thus effecting a growing relationship and perhaps initiating further research.

The clinical setting provides an exciting facility for the introduction of seasoned practitioners to the new tasks of individualization or the demands of differentiated staffing. The training program for experienced teachers will vary from the pre-service training according to the competencies exhibited by them. The general plan is for groups of in-service teachers to work with professional teams in the clinical setting for differing lengths of time. Academic requirements will grow out of limitations identified within the team setting.

The need for differentiated staffing within the elementary schools is met with training at the pre-service and in-service levels in the roles of teacher aide, assistant teacher, and professional team member and leader. The program report additionally states that it will prepare specialist teachers and educational diagnosticians for the elementary schools, although no particular program or procedure for such preparation is described. In many ways, however, each trainee with mastery of the competencies would be an educational diagnostician.

The necessity for a coalition among universities, school districts, teachers organizations, and state and federal agencies of education is a repeated concern throughout the program report. The Pittsburgh report emphasizes the fact that no single institution can effect change in teacher education and in public education. The authors indicate that the program should not be implemented until this coalition has been established. Without such a cooperative arrangement, the clinical setting would be totally ineffective.

The Pittsburgh design indicates that any university implementing this proposal must examine its own liberal arts program, deciding what courses, units, or experiences it will retain as the best base for teacher preparation. The restructuring of the liberal arts must be a joint effort of the faculties of education and liberal arts and the authors imply that it is mandatory if teacher education is to be revolutionized.

UNIQUE CONTRIBUTIONS

The major contribution of the program model is that of a systematic program outline for training teachers in individualizing instruction at all educational levels.

Additional notable features are found within the unusual clinical design: the use of clinical analysis for a systematic check of hypotheses against research data and the use of teams of professionals as modesl of teacher behaviors for prospective teachers. The professional coalition for the change of education is another important aspect of the Pittsburgh design.

The program developers identify flexibility, self-development, mastery, and efficiency as unique features of their instructional design.

The curriculum is broken into small, easily manageable pieces so that students may participate in the design of their own programs. The student's background, capacities, present inclinations, and objectives help determinte the types of experiences he will have, the depth of study and length of practice he will need, and the methods through which he will reach his learning goals. This is identified as flexibility.

Self-development is fostered within learning groups in which personal and professional strengths and weaknesses are identified by each trainee with assistance from his peers and his advisor. Self-knowledge and confidence growing out of this experience prepare the trainee for the critical role of assisting a child in discovering his own identity.

Before proceeding to the next unit of work, the student is required to demonstrate mastery, generally in the clinical setting, in a variety of practical applications.

Efficiency in learning is accomplished in the program by identifying previous knowledge of the student, avoiding repetition of previously acquired knowledge, and identification of the student's most logical and enjoyable learning procedure.

MODEL REVISION

The University of Pittsburgh program plans for program regeneration by collecting and assessing data at all phases of the program so that problems can be corrected and a record can be maintained of program progress and change.

Within the academic components, data are collected and analyzed frequently, usually at the beginning and end of each learning experience. Within the clinical component, an analysis is made of each teaching decision so that imperfect patterns of teacher behavior exhibited by the trainees can be traced back to the other components and corrected. In this way, the content of the components can be examined, verified, and the validity of the relationships between components can be determined. Figure 1, taken from the USOE report, presents the process for program regeneration.

The report provides twenty-four questions that the implementing institution may use in collecting data for an evaluation. The questions deal with (1) the clarity of competencies and their relationship to the needs in the teaching profession, (2) the details of how the learnings are acquired and how they are to be tested, (3) the size and sequence of learning units, (4) the numerous provisions for individualization (appropriateness of resources and materials and procedures for retraining teacher educators), and (5) follow-up studies on the graduate at work.

RELATIONSHIP TO GENERAL EDUCATION

Prospective teachers study the liberal arts to acquire a deep humanism which helps them approach children on an individual basis. The education faculty has the challenge of assisting in the design of programs and strategies in the liberal arts which will enlighten prospective teachers.

The most effective liberal arts sequence will be the program that (1) allows students freedom to design parts of their program, (2) makes foundation courses relevant to today's world, (3) teaches structures and processes of a discipline as well as content, and (4) correlates academic requirements with those of the School of Education.

Redesigning the liberal arts is a two-fold task: (1) restructuring the knowledge system and (2) examining and modifying the instructional modes so that they are consistent with the principles of individualization.

The University of Pittsburgh report indicates that any institution which implements this program must accomplish the task of redesigning the liberal arts sequence or the objectives of the program will be defeated.

UNIVERSITY OF PITTSBURGH

PROGRAM REGENERATION SYSTEM

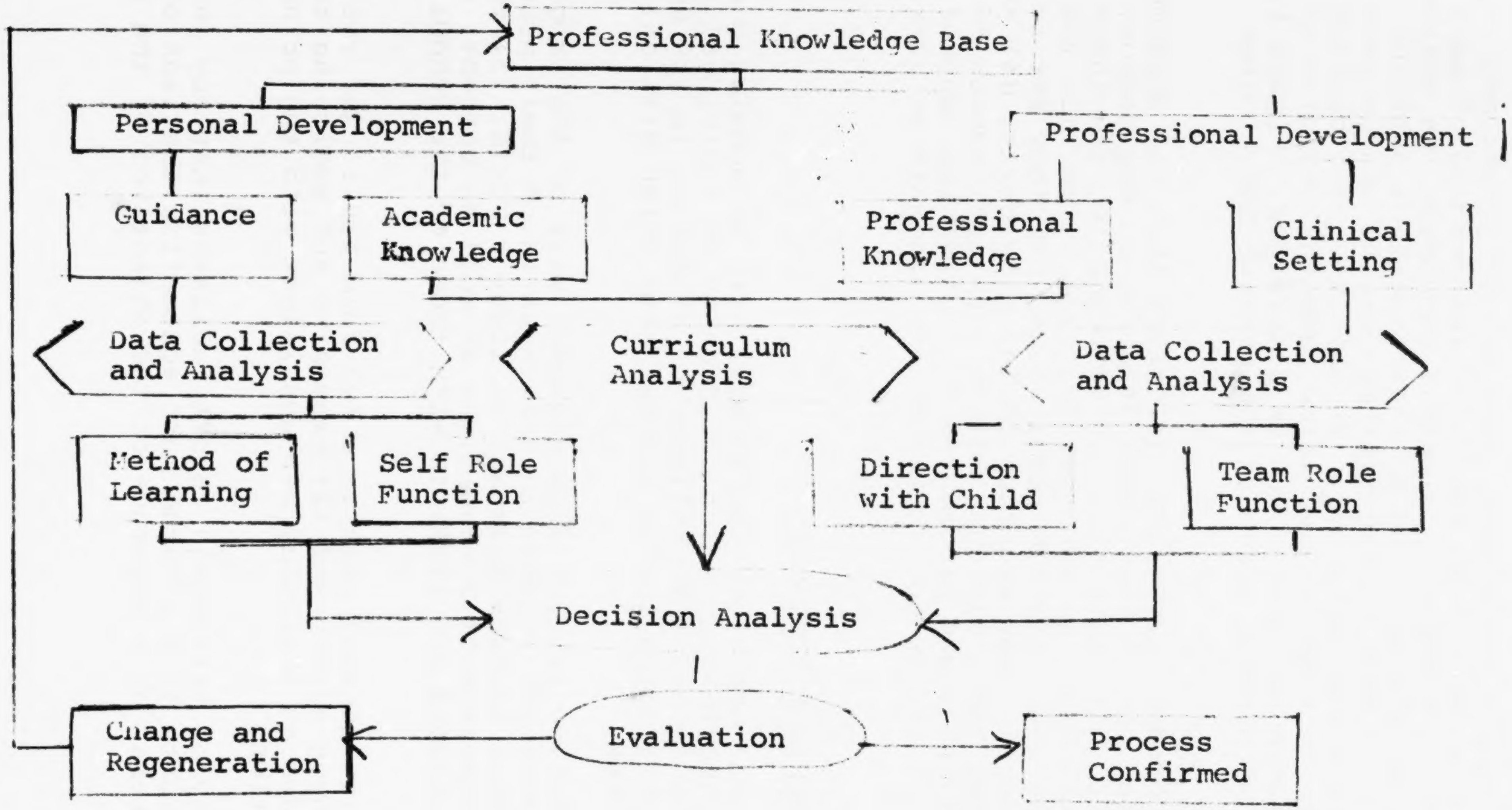

Professional Knowledge Base
Personal Development
Professional Development
Guidance
Academic Knowledge
Professional Knowledge
Clinical Setting
Data Collection and Analysis
Curriculum Analysis
Data Collection and Analysis
Method of Learning
Self Role Function
Direction with Child
Team Role Function
Decision Analysis
Change and Regeneration
Evaluation
Process Confirmed

Figure 1. Program Regeneration System

FEASIBILITY

It would not be feasible to implement the program model at The Ohio State University. The authors emphasize two criteria that should be met before a university attempts to implement the program: (1) recognition of a need for program regeneration and agreement among the faculty that individualization is the central theme for the new organization; and (2) commitment of sufficient budget, personnel, and time for the development of the instructional units and modes needed for the program.

Within the College of Education at The Ohio State University, the channels of communication between departments appear to be poor. The size of the College and the independent nature of the departments militate against a consensus within the College to commit all resources and energies to a program focusing on any one idea, including the individualization of instruction.

The cost of hiring additional personnel to free faculty for design responsibilities related to the program model would be prohibitive. A broad representation of the education faculty should participate in the design of the program units so that implementation would be widely supported. Maintenance of the program would also require additional professional faculty to man the clinical setting and retain the desirable ratio between faculty advisors and trainees. Since a commitment to this program on the part of the College of Education personnel would be unlikely, it is even more unrealistic to think that the administration of the University would agree to provide the large sums of money necessary to initiate and maintain the program.

The relationship between the College of Education and the liberal arts faculty does not suggest that the latter would be willing to commit its energies and resources to a considerable change in its instructional mode on the recommendation of the education faculty. The authors of the program model suggest that without this cooperative change in the liberal arts curriculum, a revolution in teacher education is impossible.

The most critical stumbling block to implementation, however, is the Columbus public school system. The Ohio State University is located in a community that has been characterized by a sympathetic journalist as "just entering the Harding era." Despite the importation of liberal thought and talent by the University, the Columbus public school system retains the conservative attitudes of the community and is loathe to make changes in policies, curriculum, and methods. In addition, the community provides little financial support for the education of the children. Therefore, the Columbus public schools seem presently unable to financially support a portion of a clinical setting, absolutely necessary for this program. In addition, the community conservatism would hamper such a progressive approach to education.

RELATIONSHIP TO RECOMMENDED STANDARDS IN TEACHER EDUCATION (NCATE)

Below, the Pittsburgh program model is analyzed in relation to the standards for basic teacher education programs recommended by the American Association of Colleges for Teacher Education to the National Council for Accreditation of Teacher Education in November 1969. These standards which could be applied to the Pittsburgh model as reported to the U. S. Office of Education are quoted below in the order in which they appear in the AACTE publication. Comments on the Pittsburgh design follow each quoted standard.

1. Curricula for Basic Programs

1.1. Design of Curricula

> Standard: Teacher education curricula are based on objectives reflecting the institution's conception of the teacher's role. and are organized to include general studies, content for the teaching specialty, humanistic and behavioral studies, teaching and learning theory with laboratory and clinical experience, and practicum.

The Pittsburgh program model assumes that the teacher's role is to work with pupils on an individual basis. A list of characteristics of programs for individualized instruction is given and the competencies developed in the teachers relate to those characteristics. Thus, the teacher's role--alone and as a member of a team--is represented by the nine teacher competencies described earlier under Components.

The content of Requirement I, Academic Knowledge, includes "general studies, content for the teaching specialty, humanistic and behavioral studies, teaching and learning theory...." (See Components for details.) Requirement V, Clinical Setting, more than adequately provides a mechanism for combining academic content with clinical and practical experience. The Pittsburgh design meets the criteria of Standard 1.1.

1.2. The General Studies Component

> Standard: There is a planned general studies component requiring that at least one-third of each curriculum for prospective teachers consists of studies in the symbolics of information, natural and behavioral sciences, and humanities.

One-fifth of the professional program for the trainee in the Pittsburgh program would be in the specific areas of general studies cited by the standard above. In addition, the trainee will have successfully completed the general studies program of the university which would be planned cooperatively by the education and liberal arts faculties. Thus, the proportion of general studies in the Pittsburgh curriculum would meet the requirements of Standard 1.2.

1.3. The Professional Studies Component

1.3.1. Content for the Teaching Specialty

Standard: The professional studies component of each curriculum for prospective teachers includes the study of content to be taught to pupils; and the supplementary knowledge, from the subject matter of the teaching specialty and from allied fields, that is needed by the teacher for perspective and flexibility in teaching.

Teacher Education Requirements I-V, described in detail earlier, satisfy the criteria under Standard I.3.1.

1.3.2 Humanistic and Behavioral Studies

Standard: The professional studies components of each curriculum for prospective teachers includes instruction in the humanistic studies and the behavioral studies.

Requirement I, Academic Knowledge, provides studies in the behavioral sciences in the elementary curriculum. The rationale states that "Knowledge of the behavioral sciences is a requirement for understanding individual development and functioning, and group structures and processes." Mastery of the nine teacher competency areas depends greatly on the knowledge developed in the bheavioral sciences component. As an example, the theoretical and methodological contributions of psychology are especially evident in the following competencies: assessing student achievement of learning goals, diagnosing learner characteristics, guiding pupils with their learning tasks, directing off-task pupil behavior, and enhancing self-development. The contributions of anthropology are particularly relevant to understanding the environmental influence on human capacity and achievement.

The humanistic studies are also included in the Academic Knowledge Component. Therefore, the Pittsburgh program model meets the criteria of Standard 1.3.2.

1.3.3. Teaching and Learning Theory with Laboratory and Clinical Experience

Standard: The professional studies component of each curriculum includes the systematic study of teaching and learning theory with appropriate laboratory and clinical experience.

Teaching and learning theory is studied thoroughly under the Academic Knowledge requirement and is further refined through Requirement II, Extending the Professional Knowledge Base. Appropriate clinical experiences are designed to carefully guide, analyze, and evaluate the trainee's teaching activities in relation to the theories he has learned. The logbook of teaching activities maintained in the clinical setting compares the decision-making processes used by the teachers and trainees with research and writing in the field of teaching and learning theory so that these process may be altered or reinforced.

1.3.4. Practicum

Standard: The professional studies component of each curriculum for prospective teachers includes direct substantial participation in teaching over an extended period of time under the supervision of qualified personnel from the institution and the cooperating school.

The features of the Pittsburgh design that satisfy this criterion are described in detail under Components.

1.4. Use of Guidelines Developed by National Learned Societies and Professional Associations

Standard: In planning and developing curricula for teacher education, the institution gives due consideration to guidelines for teacher preparation developed by national learned societies and professional associations.

There is no evidence in the program report that such guidelines were used in the design of the program model. However, cooperation with professional organizations in the development of the clinical setting and in future changes in the program is a primary emphasis of the Pittsburgh program. The "coalition" described before might satisfy this Standard.

1.5. Control of Basic Program

Standard: The design, approval, and continuous evaluation and development of teacher education programs are the primary responsibility of an officially designated unit; the majority of the membership of this unit is composed of faculty and/or staff members who are significantly involved in teacher education.

No specific unit is given the responsibility of designing, approving, evaluating, and developing the program. Faculty and trainees collect data on all phases of the program for use in evaluation and program redesign. Apparently, the authors of the report expected each implementing institution to develop its own precise mechanism for program evaluation and change.

2.1. Competence and Utilization of Faculty

Standard: An institution engaged in preparing teachers has full-time faculty members in teacher education, each with post-master's degree preparation and/or demonstrated scholarly competence, and each with appropriate specializations. Such apecializations make possible competent instruction in the humanistic and behavioral studies, in teaching and learning theory, and in the methods of teaching in each of the specialties for which the institution prepares teachers. There are appropriate specializations to ensure competent supervision of laboratory, clinical, and practicum experiences.

The qualifications of the teacher education faculty are discussed only in relation to their mastery of the nine competencies required in the program model and in their necessary skill in group processes.

2.2. Faculty Involvement with Students

Standard: Members of the teacher education faculty have continuing association and involvement with elementary and secondary schools.

The clinical setting provides the structure through which faculty members will be involved with the elementary schools. The feedback process espoused by the program model would ensure reflection of the faculty clinical experiences in the teacher education program.

3.1. Admission to Basic Programs

Standard: The institution applies specific criteria for admission to teacher education programs; these criteria require the use of both objective and subjective data.

The general criteria for admission to education in the Pittsburgh design are the candidate's presentation of evidence that (1) he is interested in and successful in helping children and adults; (2) he has enjoyed success and multiple interests among the academic disciplines; (3) he has utilized the American language and communication patterns successfully; (4) he has coped successfully with personal and social problems; (5) he is self-assured and confident; (6) he has good physical health; (7) his total life pattern represents broad interests; (8) he indicates open and acceptant attitudes plus understandings based on reliable and valid knowledge of all peoples in this society; (9) he understands the specifications for the teacher training program and agrees to work toward mastery. Little use of objective data is indicated, since the authors report that no current objective criteria have been successful in identifying those prospective teachers who will be successful. The design does make use of pre- and post-test capabilities and objective criteria might be forthcoming from a careful analysis of the results coming out of these testing opportunities. Presently, the program emphasizes the professional judgment of the faculty.

3.2. Retention of Students in Basic Programs

Standard: The institution applies specific criteria for the retention of candidates in basic programs who possess academic competencies and personal characteristics appropriate to the requirements of teaching.

The nine teacher competencies and mastery of the academic and professional knowledge components are minimum requirements for completion of the Pittsburgh program. Competence in these areas is evaluated in the clinical setting.

3.3. Counseling and Advising for Students in Basic Programs

Standard: The institution has a well-defined plan for counseling and advising students in teacher education.

The Guidance Component fulfills this standard.

3.4. Student Participation in Program Evaluation and Development

Standard: The institution has representative student participation in the evaluation and development of its teacher education programs.

The students are involved in evaluation of the program in their learning groups and within the clinical setting where they participate with the faculty in data collection and analysis. The program report does not specify a formal group for evaluating its program. The emphasis on student direction of their programs would lead to the assumption that students would be included in any formal body organized to evaluate and develop its teacher education programs.

5. Evaluation, Program Review, and Planning

5.1. Evaluation of Graduates

Standard: The institution conducts a well-defined plan for evaluating the teachers it prepares.

Within the clinical setting, the competence of each trainee is checked through a process called "decision analysis," described above under Model Revision. Although a precise mechanism for evaluating graduates is not outlined, the Pittsburgh report specifies that the implementing institution must develop follow-up studies in order to conduct a thorough evaluation of the program.

5.2. Use of Evaluation Results to Improve Basic Programs

Standard: The institution uses the evaluation results in the study, development, and improvement of its teacher education programs.

The program regeneration diagram, presented in the section entitled Model Revision, clearly outlines the process by which the design is improved through the use of its evaluation data.

5.3. Long-Range Planning

Standard: The institution has plans for the long-range development of teacher education; these plans are part of a design for total institutional development.

Two specific emphases of the Pittsburgh program model support the University's interest in the "long-range development of teacher education": (1) the coalition of governmental agencies, professional organizations, school districts, and the university is formed for the purpose of continual long-range planning in teacher education, and (2) the necessity of restructuring the liberal arts components within the institution implies a need for total institutional commitment to the program goals.

THE UNIVERSITY OF PITTSBURGH PROGRAM MODEL

Analysis by Barbara J. Rosso

RATIONALE

The Pittsburgh program model is based on the assumption that individuals need opportunity to develop individual talent; hence, schools, elementary through college, should be instituted in which individual talents can be developed and fostered. The Pittsburgh program model proposes the use of individualized instruction as a means to this goal. The definition of individualization as used in this program model is as follows: Individualized instruction consists of planning and conducting, with each pupil, programs of study and day-to-day lessons that are tailor-made to suit his learning requirements and his characteristics as a learner. This definition does not rule out group teaching. Whenever two or more pupils are ready to study the same task in a similar way through group presentation or discussion, it is proper for the teacher to teach them as a group.

The authors contend that teacher education students who have experienced individualized instruction will be better able to individualize the instruction of their pupils. It is also assumed that as a student gains new insights into his own behavior, he will be better equipped to help others know themselves. Individualized instruction is viewed as a means to help teachers assist each child in his quest for identity.

Three current programs of individualized instruction are cited that satisfy the definition of individualization given above. The first program is Individually Prescribed Instruction (IPI), which is being developed by the Learning Research and Development Center at the University of Pittsburgh in cooperation with the Baldwin-Whitehall School District in suburban Pittsburgh. The program curriculum includes reading, spelling, mathematics, and science. Research for Better Schools, the Regional Educational Laboratory located in Philadelphia, is presently field testing IPI in elementary schools across the country.

The second program cited is the Primary Education Project (PEP), being developed by the Learning Research and Development Center, School of Education, University of Pittsburgh and General Learning Corporation in cooperation with the Pittsburgh Public Schools. This program is being developed for nursery and primary school education in the inner city. The Frick Elementary School in Pittsburgh is participating in the program.

The third program is Planned Learning According to Needs (Project PLAN), under development by the American Institutes for Research in Palo Alto, California. This program concentrates on the areas of language arts or English, social studies, mathematics, and science. Twelve school systems are currently helping to develop and test PLAN.

These programs were used to determine common features of individualization. In turn, they indicated major characteristics for instructional programs for teachers. However, the resultant program model for the preparation of teachers is in no way limited to or by these three programs of individualization.

Individualization, exemplified in the three programs, provides education for optimum achievement through mastery of a given learning task, employs educational technology to aid the pupil in his learning task, and utilizes differentiated staff roles and team teaching. Pittsburgh incorporates these three themes in its program for educating teachers.

COMPONENTS

A component, as defined in the original document, is a program feature addressed to meet a teacher training requirement. The five components utilized in the design of the Pittsburgh program model are (1) Academic Education, (2) Professional Education, (3) Teacher Competencies, (4) Guidance, and (5) Clinical Setting. Undergirding each component is the central theme of individualized instruction. Specifications for the components are presented in Table 1.

The chief function of the Academic Education Component is to provide a base or foundation for the teaching profession. The liberal education of the teacher trainee rests on a broad survey foundation in the liberal arts. For the purpose of dialogue, the liberal arts have been grouped into four areas: (1) humanities, (2) communications, (3) social sciences, and (4) natural sciences. The general survey nature has been governed in the past by the amount of time for study in a four-year curriculum and by the organizational pattern of the self-contained classroom. The flexibility of the Pittsburgh program model will permit the trainee to acquire different experiences at his own pace, based upon mastery. The implementation of individualized instruction by professors at the university will provide alternate routes in pursuit of mastery in the liberal arts areas. By systematically helping trainees gain command of content structure, key concepts, principles, and modes of inquiry in a discipline, liberal arts can become more relevant for future educators.

TABLE 1

COMPONENTS AND SPECIFICATIONS

Components	Specifications
ACADEMIC EDUCATION	Humanities Communications Social Sciences Natural Sciences
PROFESSIONAL EDUCATION	Study of the problems that grow out of working with children Collecting data for extending the knowledge base Collecting data for refining the model
TEACHER COMPETENCIES	Specifying learning goals Assessing pupil achievement Diagnosing learner characteristics Planning with pupils Guiding pupils Directing pupil behavior Evaluating the learner
GUIDANCE	Clinical team processing Individual counseling Group directing Employing teamwork Self-development
CLINICAL SETTING	Servicing children Training personnel Extending the professional knowledge base

The Professional Education Component addresses itself to the study of the problems that grow out of working with children. The trainee is expected to apply his knowledge base with a child or children according to the specified learning task. If the trainee exhibits a deficiency in the knowledge base in relation to his behavior, he will be programed for additional knowledge experiences.

The cognitive base of the Professional Education Component includes anthropological, sociological, and psychological knowledge relevant to teaching. The knowledge base is extended through the active participation of the faculty and trainee in data collection about clinical practices. The evidence of pupil, trainee, and faculty behavior will be carefully recorded, stored, and analyzed with the application of research procedures. The data will be fed back into the program and the objectives, instruction, and team function refined accordingly. The extension and modification of the professional knowledge base is illustrated in Figure 1.

The Teacher Competencies Component consists of nine competency areas for training teachers to individualize instruction. These competencies are:

1. Specifying learning goals
2. Assessing pupil achievement of learning goals
3. Diagnosing learner characteristics
4. Planning long- and short-term learning programs with pupils
5. Guiding pupils in their learning tasks
6. Directing off-task pupil behavior
7. Evaluating the learner
8. Employing teamwork with colleagues
9. Enhancing development

Several behavioral objectives are listed for each competency. The trainee must define and demonstrate the specified behaviors at a level acceptable to the clinical faculty. This list is considered open-ended so behaviors that are not presently identifiable may develop as programs of individualization are systematically evaluated.

The Guidance Component demands a personal relationship between advisor and student, and student and program specifications. Guidance is viewed as a function of aiding students to develop in self-direction, self-realization, and self-evaluation through individual counseling, clinical team processing, and group directing. The entire process is aimed toward self-development, both professional and personal. The guidance procedures are presented in Figure 2.

The Clinical Setting Component has three basic functions: (1) to service the children in the school, (2) to make an instructional setting available for students and for retraining experienced teachers, and (3) to provide a setting for research that serves teacher education and the supporting school districts. To establish

PROFESSIONAL EDUCATION REQUIREMENT FOR IMPLEMENTATION OF INDIVIDUALIZATION OF INSTRUCTION

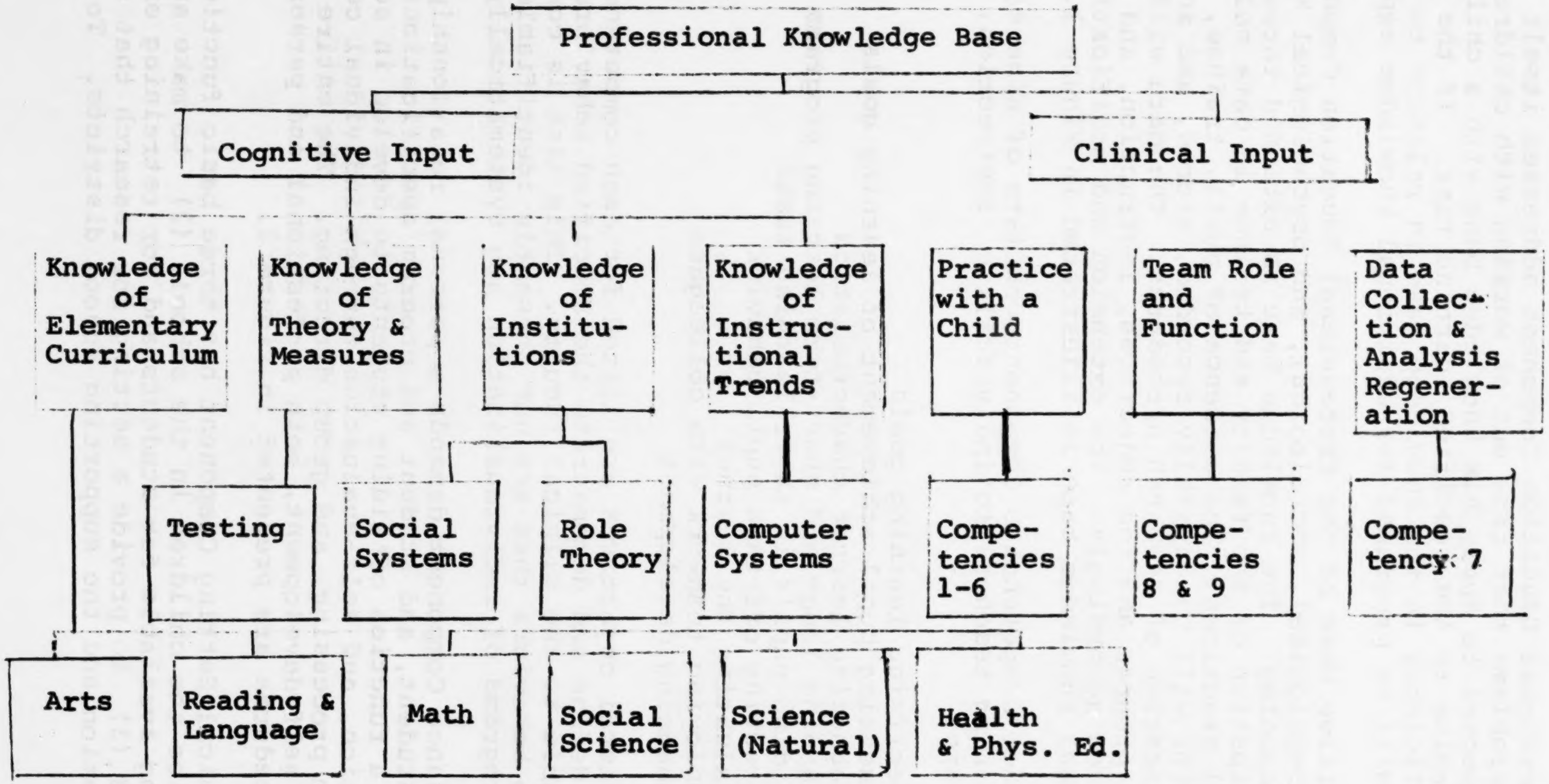

Professional Knowledge Base
Cognitive Input
Clinical Input
Knowledge of Elementary Curriculum
Knowledge of Theory & Measures
Knowledge of Institutions
Knowledge of Instructional Trends
Practice with a Child
Team Role and Function
Data Collection & Analysis Regeneration
Testing
Social Systems
Role Theory
Computer Systems
Competencies 1-6
Competencies 8 & 9
Competency 7
Arts
Reading & Language
Math
Social Science
Science (Natural)
Health & Phys. Ed.

Figure 1. Professional Education Requirement

GUIDANCE PROCEDURES

Faculty Advisor
-Elementary-

Process Trainer
-Counselor Education-

INDIVIDUAL COUNSELING	CLINICAL TEAM PROCESSING	GROUP DIRECTING
Personal problems	Developing participation skills (8.03)	Program Orientation
Revising long- and short-term goals	Developing skills of team evaluation (8.04)	Program Details
Career planning	Acknowledging traits that limit flexibility (9.01)	Program Adjustments
Counseling-out	Analyzing strengths and weaknesses (9.02)	
	Analyzing values and attitudes (9.03)	
	Formulating plans for self-development (9.04)	
	Modifying personal behavior (9.05)	

Figure 2. Guidance Procedures

such a setting, a coalition must be formed to include the universities, school districts, teacher organizations, state departments, and other related agencies. A definition of the commitment of each party must be established and the coalition formed before this program model can be implemented.

Each component makes a unique contribution to the central theme of the program model, i.e., individualized instruction. The major components are interrelated in that they expand the knowledge base of the model. As students attend the clinical setting, for example, concepts of self-development and teamwork gained through the Guidance Component are applied. The input received in the Academic and Professional Components contributes to the effectiveness of behavior in developing Competencies and working in the Clinical Setting.

Through decision analysis, each component is assessed and evaluated for its internal consistency, interdisciplinary relationship, and relationship to the philosophy of the model itself, i.e., commitment to change. Decision analysis is defined as that analytic process which identifies a teacher decision in the classroom context and examines the resulting actions for patterns of evidence contributing to the base knowledge supporting the teaching profession.

OUTCOMES

The program model is intended to provide for all aspects of the post-high school education of elementary teachers. It accommodates all persons seeking initial or continuing teacher education, regardless of their individual training needs or the roles they will fill in elementary schools.

Specific anticipated outcomes of the program model are listed as follows:

1. Students will be prepared to teach from nursery through middle-school.
2. Teachers will be able to individualize instruction in the practical setting, i.e., the classroom.
3. Students will experience individualization throughout their educational experience.
4. Pre-service and in-service candidates will utilize the same basic program model.

5. The model will provide preparation for various roles in elementary schools--specialist teachers, educational diagnosticians, interns, and aides.

6. Students will be able to extend individualization beyond the learning of concepts and skills into the learning of competencies in self-direction and inquiry, as well as into the learning of personal-social characteristics.

The teacher behaviors sought are clearly stated in conjunction with each component and its subdivisions. The authors suggest that only behaviors that are currently observable or measurable are included. They also state that any set or ordering of competencies and delineation of knowledge areas must be considered open-ended. The program model is offered as an outline to which the implementor can add or delete without violating the design of the program.

INSTRUCTIONAL TECHNIQUES AND PROCESSES

In general, the Pittsburgh program model follows the basic design of most instructional models, i.e., students are exposed to an instructional process in order to change their behavior as indicated by the specific objectives of the program. The model is different in its commitment to helping the individual achieve a system of self-development. For this purpose the Guidance Component includes a process of induction, interaction, and reflection.

The flexibility of the program model facilitates individual program designs for each student. Each trainee is given the opportunity to help select and determine the nature and extent of his training experience. Flexibility is also a necessary part of the proposed instructional mode. Individualized instruction begins with an appraisal of the learner. Instruction is then adapted to the individual. Within a short time, the effectiveness of that treatment is judged for the purpose of adjusting activities to the learner once more.

The general instructional mode is presented in Figure 3. It is a plan to restructure all teacher-learner experiences to include specifying goals, assessing student achievement, diagnosing learner characteristics, planning programs with the student, guiding the student, and evaluating student progress. This strategy for teaching could be used at all levels of learning.

UNIVERSITY OF PITTSBURGH MODEL

GENERAL INSTRUCTIONAL MODE

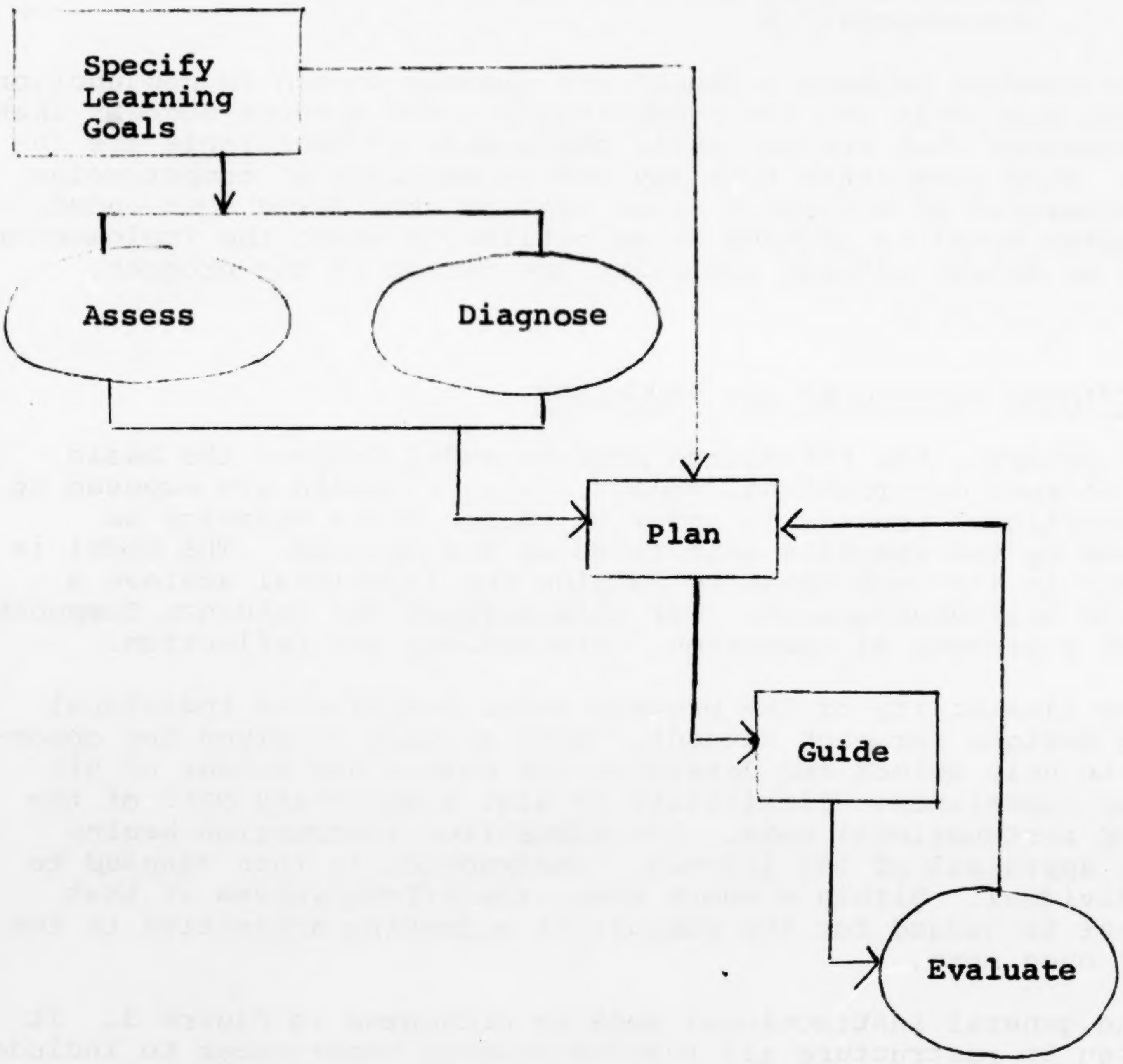

Specify Learning Goals
Assess
Diagnose
Plan
Guide
Evaluate

Figure 3. General Instructional Mode to be used by All who Participate in Training Teachers

The program model generally states that peer group interaction, independent study, small seminar group sessions, simulated modules of instruction, and clinical observation and participation will aid the student through his college program. It also suggets that materials and techniques of instruction are varied so that instruction can be adapted to the individual needs of the trainee. Alternative learning modes are given in the instructional modules in the appendix of the original document. The instructional techniques and materials used in this program of individualized instruction will need to be developed more fully by the implementor.

ROLE OF THE TEACHER EDUCATOR

The Pittsburgh program model includes a set of nine competencies that represent the skills needed by teachers in order to individualize instruction. The program model also demands that faculty members in both education and liberal arts become skillful in the nine competency areas. The faculty must master certain skills and supply evidence of such mastery.

The Guidance Component aids students in developing self-direction, self-realization, or self-evaluation through individual and group counseling. The emphasis on self-development suggests a more personal involvement with a faculty member as a means to such growth. As large and small group counseling is utilized in this program model, the advisor must have training and develop sophistication in group process work. The training of advisors in the group process skills is a key input for the implementation of the Guidance Component.

The faculty's role in the admission phase of the Education Component places emphasis on appropriate interviewing techniques and synthesis and summarization of recorded data. Upon receipt of the student's application for admission to the Education Component, information must be gathered through a retrieval system designed to provide relevant data for processing the applicant. Through a series of interviews, placement tests, and synthesis and summarization of the gathered data, the faculty review panel will then determine admission or will begin counseling-out procedures.

In the Clinical Setting Component, teacher educators must participate as members of the clinical training team in developments of the school that relate to learning, training, and research. As the school district-university coalition is established, a definition of this role must be specified.

EVALUATION TECHNIQUES

Various evaluation techniques are employed in this program. Before each learning unit, pretests are given and students are placed in appropriate learning programs according to results. General diagnosis identifies the characteristics of the learner in order to accommodate his most efficient way of learning. Alternate learning routes are proposed. After completion of the unit, a posttest is administered. If mastery is indicated, the student selects a new unit experience. If mastery is not achieved, the student and faculty member review the learning style of the student, evaluate the pretest-prescription-posttest phases in order to locate the area of difficulty, and identify a short-term experience to correct the difficulty. Evaluation of the short-term experience will indicate whether mastery has been achieved.

As indicated above, the conventional pretest-prescription posttest pattern encompasses assesssing, diagnosing, planning, and helping as processes of individualization. Evaluation is more than paper and pencil in nature as competencies require the ability to know, understand, and demonstrate a specific task at or above a certain criterion level.

RESPONSIVENESS TO SOCIETAL AND PROFESSIONAL NEEDS

Many of the significant demands of society, the major themes of reform in education, and the new technology available to instruction and learning can be accommodated by the Pittsburgh program model. The responsiveness of the program model to some societal and professional needs and concerns is indicated as follows:

1. The general instructional mode proposed in the program, i.e., individualized instruction, prepares the future teacher to function in any educational setting and at any grade level. This instructional mode accommodates training for the disadvantaged, early childhood, elementary, and so on.
2. The guidance of teacher trainees is predicated upon development of self-direction, awareness of self, and skill in working professionally with children and colleagues. The teacher who recognizes those personal traits which appear to affect his learning process or his skills of interaction with pupils will relate to learners in a positive way. This personal understanding also leads to an improved mental health status.

3. A major feature of this program model is the development of differentiated staff roles and team patterns. While these concepts have appeared at times in operational designs, the conventional teacher education program has not included adequate preparation of its candidates for these practices. The Guidance Component of the Pittsburgh program model proposes utilization of learning groups of eight to ten students. These groups will function intact throughout the Professional Education Component. As the advisor consults with the learning groups, he gives assistance to the students in developing skills to enhance team activity. Leadership skills will be developed and attention directed to the refinement of group process skills. The experience of participation in a training program that uses group structure as one feature will permit the systematic development and application of skills needed to differentiate staff roles and refine team membership.

4. The traditional student-teacher cooperating-teacher training model lacks relevance in an era of differentiated staffing. Teacher candidates in the Pittsburgh program model will be exposed to many models of teacher behavior in the Clinical Setting Component. Participation in the assorted roles of tutor, observer, assistant, student teacher, and intern will begin in the early phase of the student's education and continue throughout completion of the program. Such experience provides more potential for versatility and mastery than in the traditional training setting.

5. The Clinical Setting Component provides for in-service training of experienced teachers. The resident staff of the clinical setting will be of permanent composition blended with some teachers there for brief tours of assistant teaching as they complete short-course retraining. Whole faculties could be retrained by selective residence within the clinical environment over a period of time. The relevancy of such training will be carefully designed, controlled, and measured. In this way, in-service education becomes a part of the daily operation of the school.

6. Utilization of technology is mentioned throughout the program model. As alternate routes of learning are offered, varied technological devices can be used. The devices to be utilized are left up to the implementor.

7. The program model proposes a coalition that includes school districts, universities, teacher organizations, and state and federal agencies. The relationship between theory and practice in education can be achieved when such teacher training coalitions establish environments for training that represent the most explicit behavior models and techniques desired in teaching.

UNIQUE CONTRIBUTIONS

The Pittsburgh program model is unique in the following ways.

1. Self-development is fostered through the Guidance Component. Guidance is defined as a system for personal and professional growth that operates through the functions of clinical team process, individual counseling, and group directing. With much emphasis on group process, the student learns how to help others identify personal strengths and weaknesses. In so doing, he gains new insight into his own behavior. The teacher must know himself in order to help others know themselves.

2. Flexibility in the program model allows the student to help select and determine the nature and extent of his training experience. No longer will each student be required to go through a predetermined program in exactly the same way as others have gone through it. This feature also emphasizes the human element in learning.

3. A third unique contribution is the proposed coalition to be established between the university, school system, and other related agencies to provide a clinical setting for pre-service and in-service education. Also included in the design of the clinical setting is service to the pupils in the school and provision for research.

MODEL REVISION

The authors state that individualization is a process demanding continual refinement. This program model proposes a systematic feedback system for the training experience so that the process remains relevant to the needs of trainees. Figure 4 shows the self-regererating feedback system suggested. Through

UNIVERSITY OF PITTSBURGH

PROGRAM REGENERATION SYSTEM

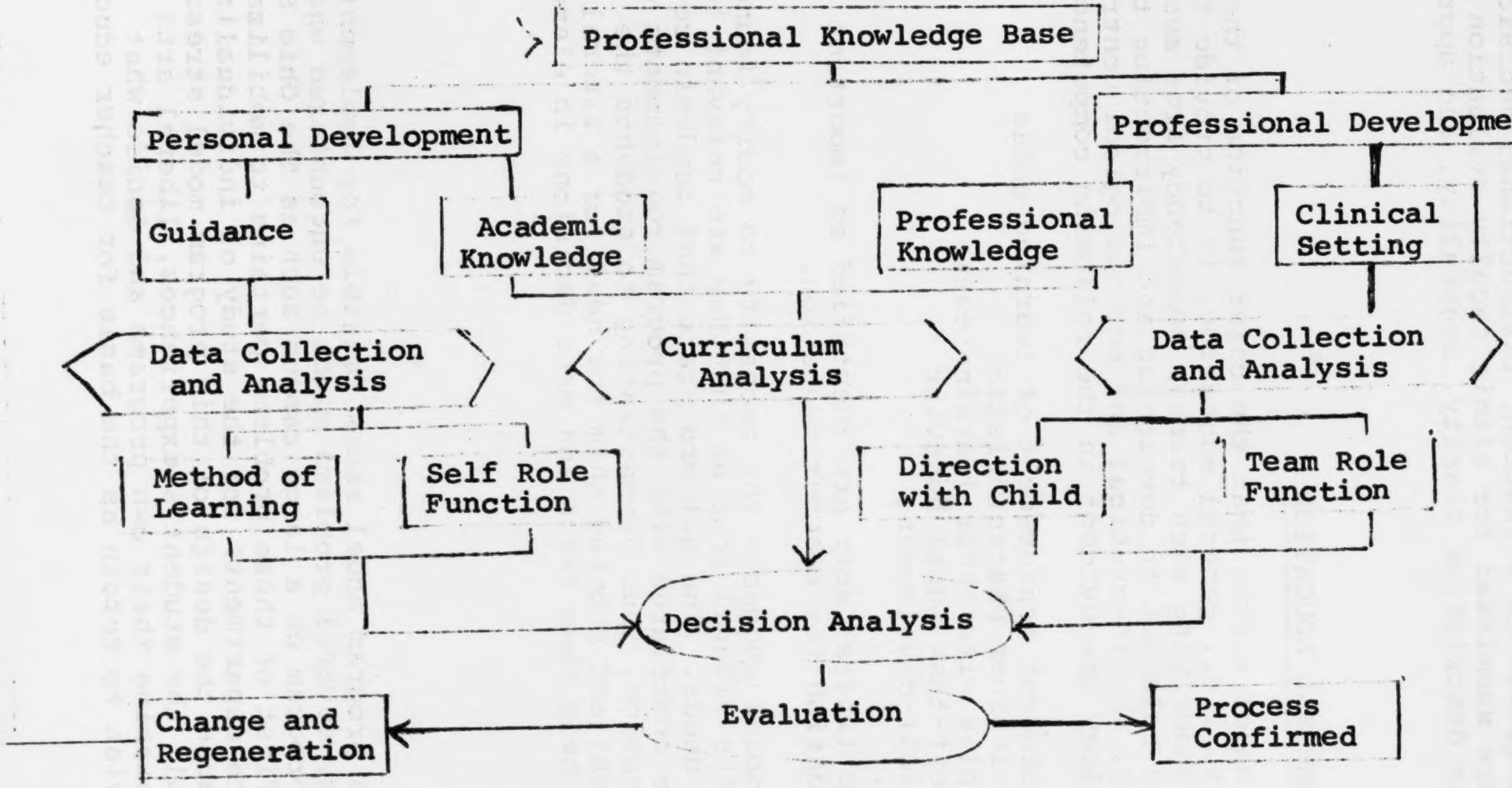

Professional Knowledge Base
Personal Development
Professional Development
Guidance
Academic Knowledge
Professional Knowledge
Clinical Setting
Data Collection and Analysis
Curriculum Analysis
Data Collection and Analysis
Method of Learning
Self Role Function
Direction with Child
Team Role Function
Decision Analysis
Evaluation
Change and Regeneration
Process Confirmed

Figure 4. Program Regeneration System

decision analysis, each component is assessed and evaluated for its internal consistency, interdisciplinary relationship, and relationship to the philosophy of individualization. Decision analysis is an analysis routine in which the teachers' behaviors are described and task analyzed. These descriptions consisting of a sequence of situation, instructional decision, and consequence are submitted for clinic faculty evaluation with reference to their descriptive clarity, generality, and appropriateness.

RELATIONSHIP TO GENERAL EDUCATION

The program model states that the chief function of the Academic Component, i.e., general education, is to provide the knowledge base. Underlying each teacher competency area must be basic knowledge relevant to developing and implementing the area. For example, the theoretical and methodological contributions of psychology are evident in the following competencies:

Assessing student achievement of learning goals
Diagnosing learner characteristics
Guiding pupils with their learning tasks
Directing off-task pupil behavior
Enhancing self-development

Other areas of the liberal arts are identified as important in developing a foundation for teacher education.

The program model suggests the necessity to modify foundation courses in the liberal arts so thatthey are relevant to today's world and needs. The authors state that academic requirements must be correlated with the program requirements of the School of Education, thus demonstrating to students the relevancy of content and showing them the need for a liberal education base to help them teach and make decisions in elementary classrooms.

FEASIBILITY

Although this program model seems feasible for implementation on any size campus, several problems might be encountered when implementing the program on a large campus such as The Ohio State University. The first of these problems pertains to mobilization of the liberal arts departments for the study of individualized instruction. Because the design of this program model stresses restructuring of all the student's experiences, liberal arts departments must examine their own programs and decide what experiences they wish to retain as the basis for teacher education.

Consequently, a new more dynamic partnership must be established between academic departments and colleges of education. Both must be committed to the theme of this program--individualized instruction. The relationship of each academic discipline to the total program must be recognized in the restructuring process. On a large campus, total commitment of the faculty to a program of individualized instruction may be difficult to achieve.

Another problem of implementation pertains to the Teacher Competency Component. Implementation of this requirement for teacher education will demand that faculty members in both education and liberal arts become skillful in the nine competency areas. The faculty will be faced with the problem of mastering skills in these competency areas and supplying evidence of that mastery. Institutions employing a large number of faculty members in both education and liberal arts may find such an in-service training program a difficult task. Also, total faculty commitment is needed for such retraining to be successful. As stated in the program model, no university can hope to implement an individualized program until the faculty is able to perform in the same manner in which they wish to train.

A third problem that might be encountered at a large university is related to the Clinical Setting Component. It is imperative, in the design of this program model, that a coalition be established by the university with school systems, teacher organizations, and federal and state agencies in order to create a school setting for individualized student and teacher training. These agencies must view individualized instruction as the way of educating children and must be willing to restructure the schools according to this mode of instruction. Universities and colleges that train a large number of teachers must establish many such settings in close proximity to the campus. If school districts in the area are not committed to the suggested instructional mode, difficulties will occur when implementing such a program.

RELATIONSHIP TO RECOMMENDED STANDARDS IN TEACHER EDUCATION (NCATE)

Some of the newly revised National Council for Accreditation of Teacher Education standards are listed below. Only those standards to which the Pittsburgh program model directly addresses itself are discussed.

Design of Curricula

Standard: Teacher education curricula are based on objectives reflecting the institution's conception of the teacher's role, and are organized to include general studies, content for the teaching specialty, humanistic and behavioral studies, teaching and learning theory with laboratory and clinical experience, and practicum.

The Pittsburgh program model clearly established the teacher's tole as that of helping each child in his quest for identity. It suggests that a teacher who is able to individualize instruction will be better able to help children find themselves. It further states that as a student experiences this mode of instruction, he will fully understand and become proficient in implementing individualization in the school setting. He will, in fact, become a model. The components of the design and the nature of student participation in each component indicate that this standard is met in the program model.

The General Studies Component

> Standard: There is a planned general studies component requiring that at least one-third of each curriculum for prospective teachers consist of studies in the symbolics of information, natural and behavioral sciences, and humanities.

The general studies component in this program model, i.e., Academic Education, is organized so that each student will experience more than one-third of his curriculum in the studies of communications, humanities, social sciences, and natural sciences as specified in the design. These specifications correspond to "symbolics of information, natural and behavioral sciences, and humanities" as stated in the standard.

Content for the Teaching Specialty

> Standard: The professional studies component of each curriculum for prospective teachers includes the study of the content to be taught to pupils; and the supplementary knowledge, from the subject matter of the teaching specialty and from allied fields, that is needed by the teacher for perspective and flexibility in teaching.

The Professional Education Component of the Pittsburgh program model provides prospective teachers the types of content mentioned in the above standard. Figure 1 illustrates the professional requirements (see page).

Humanistic and Behavioral Studies

> Standard: The professional studies component of each curriculum for prospective teachers includes instruction in the humanistic studies and the behavioral studies.

The Professional Education Component addresses itself to the study of the problems that grow out of working with children. The cognitive base includes the anthropological, sociological, and psychological knowledge that is most relevant to the establishment of a teaching profession. When the trainee demonstrates a limitation of the knowledge base affecting his behavior, he will be programed for additional experiences in the humanistic and behavioral studies. This instruction is the kind mentioned in the above standard.

Teaching and Learning Theory with Laboratory and Clinical Experience

Standard: The professional studies component of each curriculum includes the systematic study of teaching and learning theory with appropriate laboratory and clinical experience.

The Teacher Competencies Component directs itself to the systematic study of teaching and learning theory with appropriate laboratory and clinical experiences. Learning units that are part of the Professional Education Component also comply with the above standard. For example, the science module cited in the appendix of the original document indicates the systematic study of teaching and learning theory in unit S5 and practicum experience utilized for the instruction of science in unit S6.

Practicum

Standard: The professional studies component of each curriculum for prospective teachers includes direct substantial participation in teaching over an extended period of time under the supervision of qualified personnel from the institution and the cooperating school.

As indicated in Figure 5, during the third phase of the program the trainee will serve a dual role. He will be a student teacher part of the time and an assistant teacher part of the time. As a student teacher the trainee will spend all of his time working with pupils for the purpose of observing his own level of mastery in the competencies. He will function in a team situation supervised by clinical faculty members. As an assistant teacher, the student will be provided clerical experience, teacher aide experience, and tutoring experience. This type of activity provides continuous contact with pupils in both small and large groups.

During the fourth sequence an internship experience is provided. Pupil contact will continue in the clinical setting with curriculum decisions, communication with parents, and other responsibilities added to his accountability range. The internship will continue until the specified degrees of mastery are achieved.

As the third and fourth phases of the program account for half of the time required for a B.A. in Education, a substantial amount of time is utilized for supervised practicum experience in a real school situtation.

UNIVERSITY OF PITTSBURGH PROGRAM MODEL

SEQUENCE AND STRUCTURE

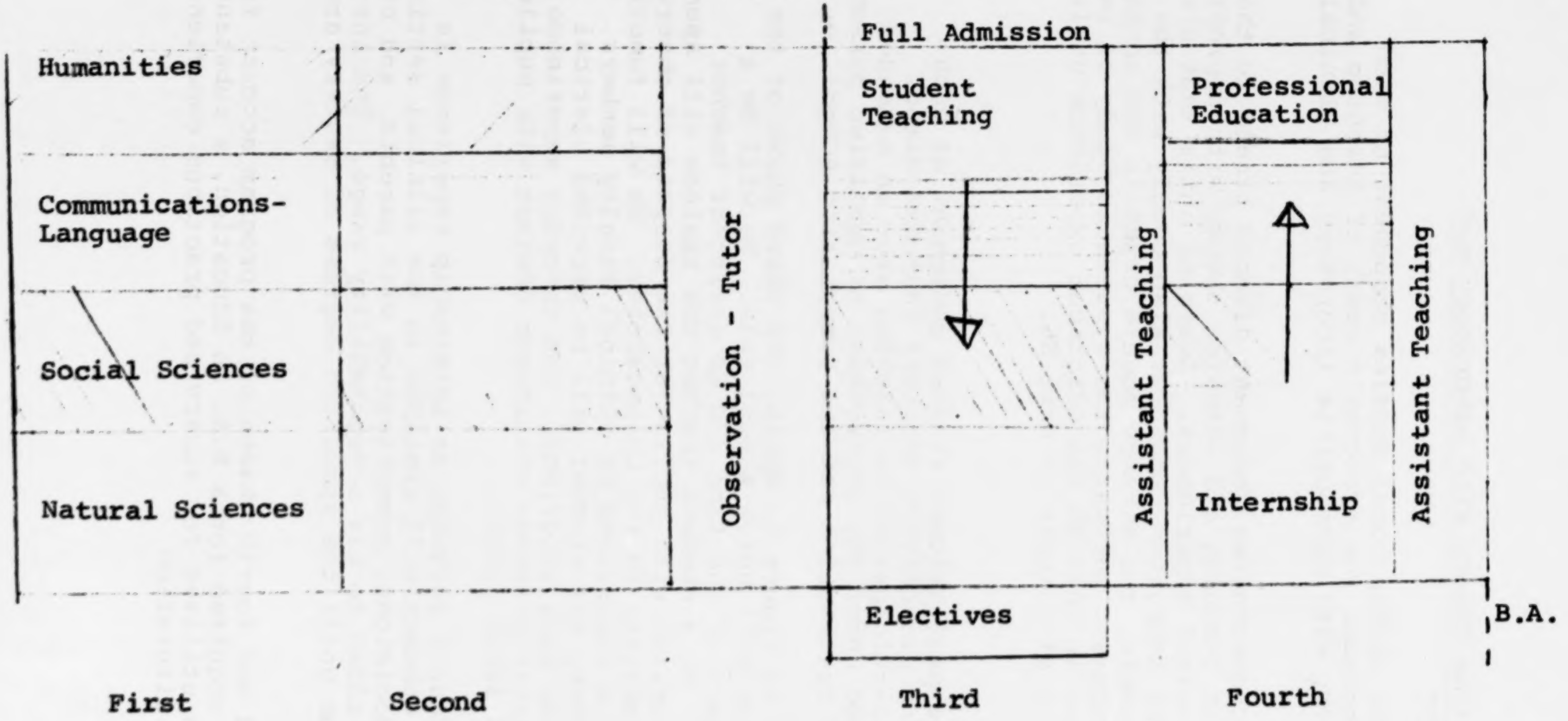

Full Admission
Humanities
Communications-Language
Social Sciences
Natural Sciences
Observation - Tutor
Student Teaching
Assistant Teaching
Professional Education
Internship
Assistant Teaching
Electives
B.A.
First
Second
Third
Fourth

Figure 5. Sequential Progress of Trainee

Faculty Involvement with Schools

Standard: Members of the teacher education faculty have continuing association and involvement with elementary and secondary schools.

In the clinical setting, teacher educators will participate as team members with the resident faculty of the school in developments that relate to learning, training, and research. The university will provide staff members according to the specific need of the school.

Admission to Basic Programs

Standard: The institution applies specific criteria for admission to teacher education programs; these criteria require the use of both objective and subjective data.

The general criteria for admission to education are the candidate presenting evidence: (1) that he is interested in and somewhat successful in helping children and adults; (2) that he has enjoyed success and multiple interests among the academic disciplines; (3) that he has utilized the American language and communication patterns successfully; (4) that he has coped successfully with personal and social problems; (5) that he is self-assured and confident; (6) that he has good physical health; (7) that his total life pattern represents broad interests; (8) that he indicates open and accepting attitudes plus understandings based on reliable and valid knowledge of all peoples in this society; and (9) that he understands the specifications for the teacher training program and agrees to work toward mastery. These criteria require the use of both objective and subjective data.

Retention of Students in Basic Programs

Standard: The institution applies specific criteria for the retention of candidates in basic programs who possess academic competencies and personal characteristics appropriate to the requirements of teaching.

Posttests, performance, and faculty judgment are used to determine academic and personal characteristics appropriate to the requirements of teaching. Specific criteria, other than the teaching competencies, are not given in the program model.

Counseling and Advising for Students in Basic Programs

Standard: The institution has a well-defined plan for counseling and advising students in teacher education.

The Guidance Component included in the design of the program model emphasizes the importance of guidance for self-development, both professional and personal. The trainee experiences individual counseling, clinical team processing, and group directing throughout the professional phase of his training.

Student Participation in Program Evaluation and Development

Standard: The institution has representative student participation in the evaluation and development of its teacher education programs.

The Professional Education Component deals with collecting data for extending the knowledge base and refining the model. In the clinical setting evidence of pupil, trainee, and faculty behavior is recorded and analyzed. The data are fed back into the system to form the basis for modifying the program objectives. The faculty and trainees actively participate in data collection about clinical practices.

Evaluation of Graduates

Standard: The institution conducts a well-defined plan for evaluating the teachers it prepares.

Although the program model suggests follow-up studies on graduates in the teaching profession, no specific plan is indicated.

THE SYRACUSE UNIVERSITY PROGRAM MODEL

Analysis by James E. Kerber

RATIONALE

The Syracuse University program model is founded upon assumptions that, collectively, suggest "openness for change" as a central theme. Consistent with that theme, the authors view the Syracuse program as a point of departure for other innovations in the training of elementary school teachers.

The first assumption is from a "position of pluralism" that recognizes that differing views of teacher education are held by public schools, universities, and colleges of education. Differences in viewpoint produce many conflicting policies and practices by these institutions. The program model therefore was developed as an eclectic model in which hypotheses generated from many points of view can be tested in light of the absence of any proven "best" way of training elementary teachers.

A second assumption is that the acceleration of change will be one of the most significant and pervasive phenomena in this century and the next. The program model purports that the one way to make teachers more responsive to and directive of change is to educate them to react to it in relevant and responsible ways. The program model responds to this demand by producing what are termed "self-directing and self-renewing teachers."

A particularly central or key assumption of the Syracuse program model is the acceptance and adoption of the "intent-action-feedback" process conceptualized by Mooney.[1] This concept, applied to the program model, causes it to be a processing system for change and not an end or finished curriculum program in itself. The program model is more than a fixed method or technique of training teachers. It hopefully will become an evolving process of teacher education.

A fourth assumption undergirds the in-service components for teacher education. The assumption notes that goals and behaviors that are valid for students (future elementary teachers) are also valid for their teachers (teacher educators) and for the program model itself. The Syracuse architects therefore assume that the program model, its teacher educators, and its students must all behave in the same way and pursue similar goals. Elementary school teachers will become self-directing, self-renewing professionals only when their programs of education are staffed by a self-directing, self-renewing group of teacher educators.

---

[1] Ross Mooney, The Ohio State University

Another emphasis of the Syracuse program model is that it does not have technological rationale, nor should the model be interpreted as though it is based upon a need for technological services. To emphasize technology would be to dehumanize the people and the program model. Rather, the program model is intended to serve human ends, and in striving to do so, it recognizes the uniqueness of each human being. Within its components and processes is awareness of varied learning styles, learning rates, and values. This acknowledgement of human uniquencess is perhaps what makes this program model most different from traditional teacher training programs.

Finally, this program model assumes that a collaborative multi-institutional relationship is beneficial and essential to teacher training. In the term "protocooperation," the Syracuse model embodies the need for mutual cooperation between and among three distinct types of organizations or institutions: (1) the university college, (2) the public school and (3) the educational industry or agency. The program model rationale recognizes that although historically relationships have been characterized by neutralism, commensalism, or parasitism, now is the time for mutually beneficial associations.

The Syracuse program model is founded upon and accepts the above rationale and considers it to be fundamental to developing new and better solutions to the problem of teacher education.

COMPONENTS

The Syracuse program model is scientific in that its design encompasses a rationale and system of behavior moving from intention to action to feedback to correction to new behavior. The components or parts are flexible enough to be adaptable to the unique needs of any user's institution.

Components are described in this program model as a unified set of curricular-instructional experiences that constitute a "curriculum thread" over an extended but varying period of time. The unifying elements are derived from the disciplines (substantive areas) that they encompass.

Taken in time sequence, the general components of the Syracuse model are (1) liberal studies, (2) pre-professional studies, (3) a senior professional year, and (4) a resident teaching year. The pre-professional component consists of seven subcomponents, one of them being the liberal arts education courses that are taken in about the first two and one-fourth years. The other six subcomponents in the pre-professional year are (1) methods and curriculum, (2) child development, (3) teaching theory and practice, (4) professional sensitivity training, (5) social and cultural foundations, and (6) self-directing units.

Each of these pre-professional subcomponents is comprised of a series of modules. A module is a planned instructional episode with a duration that ranges from hours to months. The majority of modules have pre- and post-performance measurements. The other modules have a continuous performance measurement.

The Senior Professional Year and the Resident Teaching Year together have three subcomponents. One is a modular experience entitled "Tutorial and Microteaching," which is taken in the Senior Professional Year. Also in this year is the Teaching Center experience wherein the student is teamed with clinical teachers and clinical professors in a student-teaching situation. The last component occurs in the Resident Teaching Year and takes place in a Resident Center where the student again teams with other residents and clinical professors.

The general components and subcomponents mentioned above are organized, controlled, and evaluated by supporting systems. The three support systems consist of (1) Program Support, (2) Information and Evaluation Support, and (3) Organizational Support. Their combined functions include (1) provision of instructional logistics associated with "modularization," (2) facilitation of a student's self-pacing program with a variety of instructional experiences located in multi-settings, (3) the collection, analysis, and storage of student progress, evaluation of the program model, and provision of data for research, and (4) facilitation of in-service training and support of the cooperative structure of college, public school, and educational industries.

OUTCOMES

The hoped-for outcome of the Syracuse program model is the education of a teacher who can continually explore his personal goals and values and their consequences when applied in a professional setting.

Silberman comments that like many of the other program models the one from Syracuse University has objectives that are primarily stated in operational terms.[2] Its major intent is to act as a blueprint for the development and implementation of an elementary teacher education program.

The purpose of the Syracuse model is to prepare elementary teachers, and not teachers for any peculiar grouping of children. This model avoids any attempt to prepare teachers for children who are educationally disadvantaged, isolated, pre-school, suburban, or in any other particular situations. The program model is therefore adoptable to a variety of teacher training institutions.

---

[2] Harry F. Silberman, Some Comments on Nine Elementary Teacher Education Models, System Development Corporation, March 20, 1969.

Accomplishing the goal of training generalized elementary professional behaviors is not an easy task. The Syracuse program model identifies its teacher behavior goals as behaving and becoming goals. Both personal and professional objectives at the behavioral level are specified for students of teaching. Specifically, these behaviors are categorized as (1) operational objectives, (2) instructional situations, and (3) assessment of student performances.

It is recognized that the program model does not specify a program that insures students will reach these behavioral goals. Therefore, the Syracuse model has emphasized the values that are associated with these behaviors. The theoretical basis for this procedural technique is the belief that some behavioral goals are most effectively taught by example.

There are specific levels or plateaus where students assess their own achievement toward reaching the program model's behavioral goals and where they make decisions about their personal goals and values. These decision levels concerning personal attainment come at three points in the Syracuse model. At the beginning of or during the third year (pre-professional year) the student has the opportunity to make a decision about continuing in teaching or switching to another area of study without loss of credits. During the fourth year the student makes a choice on an area of specialization within elementary teaching, either primary, intermediate, or nursery school training.

By the end of the fourth year the student has developed skills, knowledge, and feelings that enable him to function as an elementary teacher generalist and gain provisional teacher certification in most states. Again, he makes a major professional decision based on his own assessment of behavioral goal attainment. The student may pursue studies leading to further specialization (for example, remedial reading teacher) and become a resident teacher for a fifth year of training. A decision to continue would lead to a Master's Degree or its equivalent by the end of this fifth year.

In this five-year model of an elementary teacher training program the focus is on (1) using knowledge of one's self and teaching skills, (2) applying observational skills and knowledge of children, (3) becoming an independent professional teacher, and (4) developing continually as this professional person. Therefore, the anticipated outcomes or objectives of the Syracuse program model have the three major potentials of reconstructing the experiences and behaviors of the students, the teacher educators, or the program model itself, as a corporate entity.

INSTRUCTIONAL TECHNIQUES AND PROCESSES

The instructional techniques and procedures of the Syracuse program model are highly process oriented. The first two years and part of the third year are spent in liberal studies. This application of Liberal Arts Education is viewed as a seventh liberal major component in preparation for professional teacher training. In addition to electives, the instructional technique unique to this program model is the development of three courses that continue for two semesters each and are specifically designed for elementary teachers.

In the third year the student concentrates on the other six components, which together comprise the pre-professional year. These six components are: (1) Methods and Curriculum, (2) Child Development, (3) Teaching Theory and Practice, (4) Sensitivity Training, (5) Social and Cultural Foundations, and (6) Self-Direction. All of these components are subdivided into modules that take many forms. The four main techniques or processes used in these modules are: (1) totally mediated instructional episodes with a teacher educator, (2) student-directed seminars, (3) individualized instruction, and (4) those in diverse settings such as with simulation, microteaching, and tutoring.

The implication given by this program model is that these modules would place great reliance on many forms of technology, such as audio- and video-tape recorders, private carrels complete with all audio-visual aids needed, and computer assisted scheduling as well as computer-based programs. The main rationale for this reliance is related to the recognized need to individualize and personalize teacher training programs.

In the fourth or Senior Professional Year, the student continues his work within the modules. He also begins to plan, teach, and evaluate series of teaching units. The student then teaches in a Teaching Center, which is located in a public school and is staffed by clinical teachers and clinical professors. Also during this year the student completes minimal requirements for certification and makes a final decision about continuing with the program model experience.

If the student decides to continue in the program model, he begins his fifth year immediately during that summer. This Resident Year has two major instructional processes. One is the continuation of each student's specialization program during the summer sessions before and after this fifth year. The other procedure is half-time partnership teaching in a Resident Center for an entire school year.

In order to ensure the continued application and use of instructional technology the program model provides a Facilitation Center that serves all phases of this model. The range of services in this center include a curriculum library, production and duplication of materials, learning carrels, and many types of stimulus media. Among these would be open-ended films, kits for contrived experiences, film strips, audio- and video-tapes, slides, overhead transparencies, and opaque materials. Equipment in addition to the tape recorders would include teaching machines, record players, and projectors of all kinds. The program authors view this Facilitation Center as a student support system that would be used throughout a student's training.

Through all of these processes and instructional procedures the student has opportunities to make many decisions. These decisions concern teaching itself and a possible specialization within elementary teaching. One of the main advantages that is cited for the Self-Direction Component is the chances it allows students to explore both teaching and a possible specialization. What the program model does not detail is exactly how these opportunities are made available to the students.

ROLE OF THE TEACHER EDUCATOR

One of the basic assumptions of the Syracuse program model is the belief that teachers can change only when their training program is directed by a self-modifying staff. Therefore, a continuing in-service component for teacher educators is essential to assure that the program model, its students, and its teachers are capable of demonstrating attainment of the same objectives.

The main role of the teacher educator is a changing, self-renewing professional person. In the Syracuse program model the teacher educator has two major roles: (1) the clinical professor, and (2) the clinical teacher. The teacher educator is not doing tasks that are entirely different from those that he does now. However, the degree of contact with individual students and the setting in which he performs the tasks have changed.

The clinical professor's role is determined by the responsibility he has for a particular segment of teacher training as well as by the setting in which this responsibility is carried out. There seem to be three major responsibilities for the clinical professor. He serves in a guidance role with individual students, in an instructional role in module seminars, and as a team member during a student's Senior Professional Year and Resident Year. The clinical professor's settings include (1) the college campus and its classrooms, (2) the Teaching Center, and (3) the Resident Center.

The clinical teacher, while not working in as many settings as the clinical professor, also has many responsibilities and thus many roles. He has responsibilities as a guide and evaluator within many of the modules selected by students during their Pre-professional Year. He also operates as a team member during the student's Senior Professional Year. The clinical teacher has responsibilities in two different settings. One is the Tutorial and Microteaching Center, which is an integral part of many modules of the Self-Directing Component. The other setting is in the Teaching Center, working with the clinical professor and student in a variety of team planning and evaluating sessions. One role that the clinical teacher does not have is that of demonstration teacher.

Andrews states that the one trend in teacher education that shows signs of receiving increased attention is involvement of public school personnel in teacher training and college personnel in public school settings rather than only on college campuses.[3] The Syracuse model would seem to support this trend.

EVALUATION TECHNIQUES

Perhaps the main concern of the Syracuse authors is for the program model to be "open" and dynamic. The rationale seems to rest upon the adoption of the "intent-action-feedback" concept as the primary technique for evaluation. This self-renewing aspect of change runs through the entire program model; with the program itself, the students, and the teacher educators.

The foundation for this intent-action-feedback concept is found in Mooney's theoretical work, which suggests that the factors of problem resolution, decision-making, confrontation with a pluralistic reality, ways of becoming, and ways of behaving. The Syracuse program model has used these factors to conceptualize what they describe as "new" ways of becoming (a teacher) and "new" ways of behaving (as a teacher).

Specifically, examining this program model's self-evaluating techniques for its students and teacher educators, one finds that "becoming a teacher" involves (1) perceiving, (2) thinking, (3) feeling, and (4) deciding about the profession of teaching. In examining "behaving as a teacher" the program model suggests (1) having intentions, (2) acting on these intentions, and (3) using feedback to evaluate and modify one's own future behaviors.

Finally, the Syracuse model has developed three major evaluating Supporting Systems, all of which have testing and other evaluative functions. There is a Program Support, Information and Evaluation Support, and Organizational Support Systems.

---

[3] L.O. Andrews, "Challenges and Needed Developments in Teacher Education," Teacher Education in Transition, Multi-State and Teacher Education Project, Baltimore, Maryland, 1969.

RESPONSIVENESS TO SOCIETAL AND PROFESSIONAL NEEDS

This program model has some very specific features that deal with the needs of both the society and the teaching profession. Generally, the model is responsive in these ways:

1. It makes the best humanistic use of the technology of teacher training tools.
2. It is an open system that functions in a reciprocal relationship with research, development, public elementary education, and educational industries and laboratories.
3. It produces highly adaptive teachers who can and will change themselves, and who will guide relevant changes in the institution of education.
4. It makes use of the new and more promising ideas in teacher education, even though they are not designed particularly for this program model. This would include:
    a. Sensitivity training
    b. Microteaching
    c. Simulation
    d. Computer-based instruction
    e. Video-taped feedback of teacher behavior
    f. Resident service for initial professional induction

Specifically, the Syracuse program model is responsive by trying to produce:

1. Self-renewing teachers who can function today, adapt to change tomorrow, and guide the direction of that change.
2. Self-renewing teacher educators who work in these ways:
    a. Clinical professors in Teaching and Resident Centers as team planners and evaluators.
    b. Clinical teachers in Tutorial, Microteaching, and Teaching Centers as guides, team planners, and evaluators.

Finally, this program model is responsive through its recognition of the need for the individualization and personalization of teacher education. The Self-Directing Component of the Syracuse model includes provisions for counseling and personal exploration of goals, values, and their consequences in a professional setting. Through this exploration of the world of an elementary school teacher, each student is able to more effectively make decisions that will benefit himself, society, and the teaching profession.

UNIQUE CONTRIBUTIONS

The developers of this program model see its uniqueness in being a "design to educate teachers in new ways of perceiving situations, realizing existing alternatives, thinking, feeling, deciding on courses of action, and taking action through new ways of behaving." The entire program aims to train teachers who behave and become in changing ways. Therefore, the developers consider their program model unique in its entirety.

To this writer the features that appear different include the attempt to reorganize the content of some courses in the liberal education component so that they are more directly concerned with the needs of elementary school teachers. Three inter-disciplinary double-semester courses deal with changing perspectives in the humanities, social sciences, and natural sciences.

Unique, too, is taking the term "protocooperation" from ecology and applying it to the relationships that should exist among the college, public schools, and educational industry or agency. The term "protocooperation" implies that two or more institutions interact in a mutually beneficial relationship that is not obligatory to either.

Three other unique features of the Syracuse program model are located away from the university campus in the public schools. The Tutorial and Microteaching Center is staffed by trained clinical teachers and provides the setting for module experiences within the Self-Directing Component.

The Teaching Center is the setting for student teaching experiences. Within this Center each student is involved in team planning and evaluating with a clinical teacher and clinical professor. Those students who choose to continue in the program teach in the Resident Center during the fifth year. The resident student teaches in partnership with another resident. They share responsibility and salary for one classroom. The residents work with a team of clinical professors in the elementary classroom and in on-campus seminars.

A final unique contribution of the Syracuse program model seems to be the three supporting systems that provide data, testing, and other evaluative feedback to the three major segments of this program model. These support systems are: (1) Program Support for the model itself, (2) Information and Evaluation Support for the students, and (3) Organizational Support for the protocooperative institutions.

MODEL REVISION

The Syracuse program model developers describe their support systems by stating that, "Each support system needs to be evolutionary in order to handle various components of the development of the program model. The program must be able to respond to change without major redesign." With this expressed belief it is not surprising that the Syracuse model design is flexible and calls for support systems that center around a general purpose, time-shared, data management computer program.

One of the basic assumptions of this program model was that it was just as necessary for the model to be open and renewing as it was for the students and teacher educators to be so. Field testing is the part of all three support systems that will assure that the model will evolve. This aspect will not be tested until the implementation of Phase III of the program model.

The Program Support System has three major divisions that are intended (1) to design, develop, and test the program model, (2) to field test the modules or subcomponents of the model, and (3) to redesign, redevelop, and retest the entire program. The Information Evaluation Support System is primarily concerned with process evaluation elements or evaluation of the ongoing program and students' attainment. It has four major subelements: (1) module pre- and post-tests, (2) information to Program Support System for redesign phases, (3) information to the student on his progress, and (4) information about students as a product of the program model.

The Organizational Support System has two substructures. One is the Maintenance Substructure and the other is the Adoptive Substructure. Each of these has an internal and external element. Internally, the substructures are concerned with providing (1) information among faculty, students, and administration, (2) feedback loops so that data are transmitted to "decision points," and (3) developmental experiences for internal renewing. Externally, the concern is with sectors of the university, public schools, industry, regional laboratories, and governmental agencies.

Specifically, all of the support systems are for the purposes of indicating methods of assessment for change by all the varied institutions concerned, helping personnel make decisions more professionally, and creating a changed model that will function more effectively than the previous one. Provisions for revision are among the strongest features of this program model.

RELATIONSHIP TO GENERAL EDUCATION

Probably the two most positive aspects of the relationship of the Syracuse program model to general education are the recognition by the model proposal of the importance of liberal arts education in the training of teachers and the necessity of modifying that education to more nearly meet the needs of future elementary teachers. In this program model the general education phase is designed to be the knowledge and processes that when translated into the "language" of elementary school children will become that which teachers will teach to these children.

The first two years and part of the third or Pre-professional Year are spent in the areas of liberal education. The Syracuse program model has proposed three distinctly unique two-semester courses. Through these modified curriculum they have allowed for the most diversified of all of the activities of the program model.

The three courses are entitled "Changing Perspectives in the Humanities, Social Studies, Natural Sciences." They have all been designed cooperatively among liberal arts scholars and educationists. Their stated purpose is to provide a "knowledge integrating" function and medium of study of contemporary issues and processes used by persons who must work (teach) in these areas. The relationship to general education seems to be most effective and efficient for the students of teaching that are being trained in this program model.

FEASIBILITY

It is almost impossible to speak of feasibility as it relates to cost factors at this stage in program model development. Therefore, this section will eliminate cost as a consideration at this time. Other factors to be considered include organizational problems, personnel role changes, logistical considerations, and procedural techniques related to numbers of students.

The establishment of protocooperation or the changing of historical relationships among university, public school, and other agencies does seem to be feasible at The Ohio State University. The increasing awareness of interdependence and equality of the contributions of each institution is now being discussed.[4] However, internal changes that would be necessary for adoption of the liberal education component of the Syracuse program model would not seem to be as readily possible.[5] A first step toward this change could be the establishing of an interdisciplinary committee to examine the present program.

Personnel role changes appear to be possible within the present faculty structures of the college and of the public schools. The question of how to get faculty to look at itself is not easily answered, but again the recognition of a need to change can be the needed beginning.

Logistical consideration would seem to be a prohibitive factor at The Ohio State University with its large student population, but the effect may be exactly the opposite. It would seem that all of the components that tend to individualize, personalize, or modularize the teacher training program would be most efficient and effective in a large university. Students' identification with minimum numbers of fellow students who desire to undergo similar experiences would perhaps be much easier in the largest numerical setting possible. The specific behavioral goals of the program model could also be evaluated more effectively in a large institution with multi-group settings, wherein control groups could be established more readily.[6]

Procedural techniques and their continuous evaluation require computer-based services.[7] These are available at The Ohio State University and a shared-time basis should allow feasible budget considerations.

In summary, the Syracuse program model developers believe that their model is feasible and this writer believes it could also be implemented at The Ohio State University.[8] In order to make any final decisions concerning the adoption of this program model it is necessary to await the report of Phase II, which is the study of the feasibility of the Syracuse program model.

---

[4] Richard I. Miller, "Needed: Experimental Schools that Really Experiment," Phi Delta Kappan, April, 1969.

[5] Jay A. Monson, "The New Models in Elementary Teacher Education," Phi Delta Kappan, October, 1969.

[6] Don Hamachek, "Characteristics of Good Teachers and Implications for Teacher Education," Phi Delta Kappan, February, 1969.

[7] Harry S. Hartley, "Limitations of Systems Analysis in Education," Phi Delta Kappan, May, 1969.

[8] Wilbur Weber, "Explanation of Syracuse Model," talk on video-tape, The Ohio State University, October 9, 1969.

RELATIONSHIP TO RECOMMENDED STANDARDS IN TEACHER EDUCATION (NCATE)

It would seem a rather meaningless task to examine each of the NCATE standards and then describe to what degree or extent the Syracuse program model meets, exceeds, or falls short of that standard. Rather this section will express a general reaction to the appropriateness of the standards for a program such as the Syracuse model, and describe the areas of greatest strengths and weaknesses as they relate to the NCATE guidelines.

The Syracuse program model generally meets or exceeds NCATE standards. Since it is a program model aimed primarily at undergraduates, Part I of the standards is most relevant for comparison. The Syracuse model does have a fifth year or post-baccalaureate component, but it is voluntary for each student and therefore will only be referred to and not examined here.

The following sections of the standards are those which seem to have been exceeded in the Syracuse program model.

Section 1.2

> Standard: There is a planned general studies component that requires at least one-third (of four years) of each curriculum for prospective teachers consists of studies in the symbolics of information, natural and behavioral sciences, and humanities.

The two and one-fourth years of liberal education far exceed the time standard, and the three interdisciplinary courses designed particularly for elementary school teachers are an excellent addition to make liberal education more meaningful.

Section 1.33

> Standard: The professional studies component of each curriculum includes the systematic study of teaching and learning theory with appropriate laboratory and clinical experiences.

The laboratory and clinical experience section is more than satisfied in the Self-Directing Component modules that are a part of the Tutorial and Microteaching Center experiences.

Section 1.34

> Standard: The professional studies component of each curriculum for prospective teachers includes direct substantial participation in teaching over an extended period of time under the supervision of qualified personnel from the institution and the cooperating school.

The practicum standard is met in three ways in this program model: the three public school centers--Tutorial and Microteaching, Teaching, and Resident Centers.

Section 1.5

Standard: The design, approach, and continuosu evaluation and development of teacher education programs are the prime responsibility of an officially designated unit; the majority of the membership of this unit is composed of faculty and staff members who are significantly involved in teacher education.

The basic assumption of the need for protcooperation which involves the college, public schools, and educational industries and agencies is an excellent response to this standard.

Section 2.1

Standard: An institution engaged in preparing teachers has full-time faculty members in teacher education, each with post-master's degree preparation and/or demonstrated scholarly competence, and each with appropriate specializations. Such specializations make possible competent instruction in the humanities and behavioral studies, in teaching and learning theory, and in the methods of teaching in each of the specialties for which the institution prepares teachers. There are appropriate specializations to ensure competent supervision of laboratory, clinical, and practicum experiences.

The use of clinical teacher as program model faculty is justified by the definition of this role. In this program model the professional person who fulfills the responsibilities of clinical teacher is defined as being an elementary teacher with special training in the diagnosis and remediation of pupil-learning difficulties. Such an individual would most effectively fit this NCATE standard.

Section 2.2

Standard: Members of the teaching education faculty have continuing association and involvement with elementary and secondary schools.

The clinical professor's involvement in on-campus activities, plus active teaming roles in both the Teaching Center and the Resident Center would exceed this standard's requests.

Section 3.2

Standard: The institution applies specific criteria for the retention of candidates in basic programs who possess academic competencies and personal characteristics appropriate to the requirements of teaching.

Another of the basic assumptions of this program model is the importance of developing self-renewing, decision-making students. Therefore, this standard is met not only by the college as an institution, but also by the program participants' self-decisions. The student may decide whether to remain in teacher education, what specialization he should attempt, and if a fifth year would be beneficial to his professional aspirations.

Section 3.3

Standard: The institution has a well-defined plan for counseling and advising students in teacher education.

There would be a great deal more individual counseling and guidance in the Syracuse model because of the new roles of the clinical teacher and the clinical professor in many situations during the student's experiences.

Section 4.3

Standard: The institution provides physical facilities and other resources essential to the instructional and research activities of each basic program.

The physical facilities standard is met and exceeded in this program model through the use of multiple settings, including the college campus and three different public school settings.

Section 5.1

Standard: The institution conducts a well-defined plan for evaluating the teachers it prepares.

The Syracuse program is most able to evaluate its undergraduate products (students) through the fifth year component of this program model. By guiding the new teacher through this Resident or first year as a teacher, the program model staff can efficiently evaluate its own graduates.

Section 5.2

Standard: The institution uses the evaluation results in the study, development, and improvement of its teacher education programs.

The three support systems--Program Support, Information and Evaluation Support, and Organizational Support--all enable evaluative data and effective program revision.

There seem to be three sections of the NCATE standards that either do not apply or are not met by the present program model proposal.

Section 3.1

Standard: The institution applies specific criteria for admission to teacher education programs; these criteria require the use of both subjective and objective data.

Admission standards for program model students are not outlined or discussed. The inference would be that the same standards would hold for gaining admission to this teacher training model as would be required for admission to any teacher training program.

Section 3.4

Standard: The institution has representative student participation in the evaluation and development of its teacher education programs.

Other than self-evaluation, the student's roles in evaluating overall program model are not clear. The Information and Evaluation Support System would furnish the data concerning students but would not be a substitute for students' personal involvement in the program model evaluation.

Section 4.1

Standard: The library is adequate to support the instruction, research, and services pertinent to each teacher education program.

Section 4.2

Standard: A materials and instructional media center for teacher education is maintained either as a part of the library, or as one or more separate units, and is adequate to support the teacher education programs.

There is no direct information given concerning library or curriculum materials. The establishment of off-campus centers would require special attention to the ready availability of materials in those centers.

SYRACUSE UNIVERSITY PROGRAM MODEL

Analysis by Alice Garry

RATIONALE

Elementary education will be different in the future; many changes will occur in the education of children. In fact, change will be one of the most significant and pervasive factors in the last quarter of the twentieth century. A teacher education program can be developed that will prepare future teachers to confront change, to react to it responsibly, to guide it constructively for the welfare of the individual and society, and to initiate change in the institutions and communities in which they will work. When a program or a person meets change with responsible behaviors, he himself introduces change into the world.

The Syracuse program model is built for the future--a future for which the specific knowledge and skills that graduates of the program will need can only be speculated upon. The program model draws heavily on the work of Ross Mooney with respect to life-giving systems. His theory maintains that "life-giving systems operate as systems, open to their environment, integrative of their being, in transactional give-and-take of energies across their borders, selectively forming fresh fittings in creative transformations (adaptations, creations) as time passes." The Mooney model takes form in this program model in intent-action-feedback processes, problem resolution, decision-making, the confrontations of a pluralistic reality, new ways of becoming (perceiving, thinking, feeling, deciding), and new ways of behaving (having intentions, acting on them, and using feedback to evaluate and modify future behavior).

The developers of the program model take the position that only through multi-institutional cooperation can teacher education become a truly dynamic professional education. Therefore, the program is designed to utilize personnel from a university or college, public schools, the educational industries, and regional laboratories and other appropriate agencies in a condition of "protocooperation" or interpendence. The rationale for recommending this type of organization stems from the belief that a new conception of the structure of teacher education is needed.

COMPONENTS

The components of the Syracuse model have been developed on the assumption that teacher educators have differing views. That these differences exist is recognized as a reality of teacher education today. Public school teachers and college professors may have differing views, as may organizations and institutions concerned with teacher education. With this in mind, the program model takes a pluralistic position, believing that new and better solutions to the problems induced by change can be developed. The program model is designed to capitalize on this pluralistic position--to draw from the public schools, educational industries, regional laboratories, and other agencies those experiences that will enable students to cope more effectively with the demands of change.

The program model is designed as a five-year program, with the first two years devoted to liberal studies. In the junior year exploratory professional study is begun while liberal studies continue. The final year, including the preceding and following summers, is a resident year, and a period for developing and refining: (a) skills and knowledge from previous years, and (b) a specialization that is unique for each student. During the entire resident year, a student would be assigned to a Resident Center of his choice. Here, he would share the complete responsibility of a classroom with another resident. Each would be paid half a salary. The residents would be supervised by the Director of the Resident Center and a team of clinical professors.

The seven components of the program, which are integrated into the basic design of the total program, are: (1) Liberal Education, (2) Methods and Curriculum, (3) Child Development, (4) Teaching Theory and Practice, (5) Professional Sensitivity Training, (6) Social Cultural Foundations, and (7) a Self-Directed Component.

The Liberal Education Component consists of eighteen hours of liberal education (to be supplemented by varying hours of liberal arts education, depending on the requirements of the adopting college). Six hours are devoted to the Humanities, six hours to the Social Sciences, and six hours to the Natural Sciences. This component is designed to enable students to acquire new ways of perceiving, realizing, feeling, and deciding, rather than merely to gain knowledge of the various areas.

The Methods and Curriculum Component is designed to aid the student in problem resolution, to help him apply effective approaches to new problem situations. This component is constructed in modules, which deal with the content and teaching methods associated with language arts, reading, social science, science, and mathematics. The primary goal of this component is to enable the student to confront and resolve problems. The secondary goal is to provide basic understandings and skills to help students in resolving curriculum and methodological problems during both training and professional teaching.

The Child Development Component focuses on instilling sensitivity in the teachers for the children they will teach. It is designed to help the students understand the meaning of children's behavior. Students are actively involved in describing and analyzing child behavior.

The basic goal of the Teaching Theory and Practice Component is to enable students to make wise, non-substantive teaching decisions. Teachers will be required to make plans for both long- and short-range activities.

The Professional Sensitivity Training Component is concerned with the development of the student's understanding and skills relevant to the dynamics of intrapersonal and interpersonal, group and organizational interactions. This component would include readings, seminars, and T-group experiences. Awareness of self as a person is the fundamental goal. Awareness of one's role as a teacher and a professional in the school organization and the total educational system is also emphasized.

The Social-Cultural Foundations Component, in its preprofessional aspect, is primarily concerned with giving teachers enough understanding of the social and cultural dynamics of the classroom and the school as a social institution to make their training "real." In the senior professional year, the emphasis is on "reality testing," provided by field experiences with students. During the resident year, the major focus is the application of skills and understandings to an analysis of the social, economic, and political forces operating in the school system in which the student is teaching.

The Self-Directed Component is intended to foster independent, self-directed activity. It is less structured than the other components, particularly with respect to its subject matter. The student will be asked to: determine what changes he would like to see take place in the children he teaches, describe these changes behaviorally, determine what specialized training is needed to accomplish these goals, and accomplish such ends as he has specified with the pupils he teaches during his resident year.

The construction and possible implementation of these components is in accord with the pluralistic viewpoint of teacher education. For example, in the Methods and Curriculum Component, one module, CM-21, requires an input of twenty hours of student time, five hours of university faculty time, and fifteen hours of clinical professor and clinical teacher time. The cooperation of all three is essential for successful completion of this module on "Interpretation of Curriculum to the Public."

Individual rationales are available in support of each component, and are found on the following pages in the Final Report:

Liberal Education, p. 72-75
Methods and Curriculum, p. 89, 91
Child Development, p. 175-177
Teaching Theory and Practice, p. 219, 224
Professional Sensitivity Training, p. 283-285
Social-Cultural Foundations, p. 316-318
Self-Directed, p. 410

The Syracuse program model provides rationales not only for the seven components, but also for most of the modules within the components. With two exceptions the rationales seem well-defined and clearly stated. The rationale for the Teaching Theory and Practice Component seems to be poorly stated. The program model developers state that the rationale for the Professional Sensitivity Training Component is based on untested assumptions, which the program proposes to test.

The model does not appear to be consistent philosophically in that the same basic method or form is not utilized in each component. For instance, little precise content is specified as objectives for the Child Development Component, while the modules in the Teaching Theory and Practice Component are designed in an organized, structured manner, in which the content of one module is designed to form the basis for the following module. Dr. Weber, the program model director, has personally stated that the inconsistency of methodology was intentionally inserted, because the develoeprs felt that a "mixture" was needed and, indeed, beneficial.

OUTCOMES

The Syracuse model has been created to help individuals to: (a) become increasingly perceptive, (b) have a positive concept of themselves as teachers, (c) come to terms with themselves regarding their motives for becoming teachers, and (d) develop a system of professional values consistent with their personal integrity and the demands of the education profession.

If the program is successful when implemented, its graduates will be sensitive to other people (children and peers), and will be capable of working with them in ways that enhance their unique potentials. The graduates will be committed to the welfare of those with whom they work, and dedicated to making significant contributions to the lives of the pupils and to the institutions and communities in which they work. The graduates will be receptive to change. They will be capable of responding to the problems they face by defining appropriate intents, taking action in line with those intentions, and evaluating the consequences of such actions in their own lives and in the lives of others.

The program must progress toward the same goals that are held for the students. The program staff must utilize new ways of perceiving situations, of realizing existing alternatives, of thinking, of feeling, and of deciding on courses of action, and of taking action through new ways of behaving. In other words, the program model developers feel that the objectives of a higher level, such as those of "becoming," can best be taught by example from the program staff.

The developers recognize that, in the pluralistic environment, there is apt to be a diversity of proposed responses to a given situation. This diversity may lead to confrontations in an open, inquiring climate, with the better alternatives hopefully prevailing. These alternatives are translated into what are called "responsible behaviors," and are characterized as: (a) intending, (b) acting on the basis of the intention, (c) accounting for the consequences of the action, and (d) using the results of the accounting to modify future intents and actions. These behaviors are an outgrowth of Mooney's life-giving systems, on which the rationale for the program is based.

The model also includes specific behaviors that teachers should exhibit at the end of the program, as a result of experiences encountered in the Child Development Component. The entire Teaching Theory and Practice Component is devoted to developing specific behaviors in teachers.

INSTRUCTIONAL TECHNIQUES AND PROCESSES

The approach developed in this program is through problem resolution. The term "resolution" implies a continuing process, rather than solution, which implies a final disposition of a problem. The approach through problem resolution dictates no particular method of instruction. It asks that the student develop or request instructional techniques that relate to the nature of the problem. Among the techniques upon which the student might draw are: (a) professional sensitivity training, (b) microteaching, (c) simulation, (d) computer-based instruction, (e) objective analysis of instruction, (f) largely self-paced, modularized instruction, (g) video-tape feedback of teaching behavior, (h) programed instruction, (i) resident service as a technique for initial professional induction.

Though none of these techniques was developed specifically for this program model, their use within the program represents a unique configuration of new and promising ideas in teacher education that will be used in conjunction with many of the more traditional ideas such as seminar instruction, observation of live classroom situations, mediated observations of educational settings, exploratory teaching, video-tape lectures, and relevant readings in the field of education.

Separate rationales are not provided for each of these techniques. However, underlying each technique is the overall rationale of the need for methods of coping with change. Individual rationales are provided for all modules, which include these techniques.

ROLE OF THE TEACHER EDUCATOR

The role of teacher educator, in this program model, is performed not only by the university personnel involved in preparing teachers, but also by those personnel from public schools, educational industry, and agencies such as regional laboratories. These groups are all engaged in teacher education in a system of protocooperation, mentioned previously. This program model calls for new roles for members of these groups.

Individuals from one or several of these categories might serve in one or more of the following positions:

Faculty Facilitator--to be available to lead groups and conduct seminars, if the students wish to be led by a trained leader.

Field Consultant for Facilitation Center--to be responsible for obtaining tapes and publications of various outstanding professors in colleges and universities in this country and abroad. These would be made available for students to see and hear. The field consultant would also act as the contact man for students who would profit from work-study experiences during one or both of their graduate summers.

Facilitation Center Director--to be in charge of orientation, training, activities, performance, and evaluation of the center's staff and personnel, coordinate seminars, etc.

Counseling Advisor--to be responsible for sixty to seventy students, including holding conferences and reading students' diary-logs; to hold conferences during the resident year in the field; to meet with other counseling advisors and staff, and perform various other functions.

T-Group Trainer--to organize T-groups for beginning sessions of the Professional Sensitivity Training module.

Liaison Man--to establish and maintain communications and feedback between the enabling seminars and the Facilitation Center.

Librarian--to assist students in their use of the library, and to disseminate information concerning resources and their availability.

Production Center Supervisor--to be responsible for production services to students, such as providing equipment and materials to be used by students in their assignments and teaching.

Abstractor-Recorder--to maintain a record-keeping unit where student diary-logs would be summarized and stored. All data would be kept up-to-date, ready for the counseling-advisor's use in briefing himself before a conference with the students.

Since this is a program model that could be, rather than one that is, these are only suggestions for possible positions. These roles might be performed by personnel from the university, public schools, educational industries, or regional laboratories. The developers of this program model feel that only when all of these groups work and plan together to create, implement, and continually modify a program for the training of teachers can a really vital program be developed.

EVALUATION TECHNIQUES

The program model contains what is termed the Information and Evaluation Support System, which is designed to serve four primary roles. The first is to gather data on student performance and to feed the data back to the instructional staff. The second is to evaluate the modules in terms of worth (both inter- and intra-module), as well as to examine them for the effect of differential instructional patterns. A third function is that of analyzing the effectiveness of components and the total program. The final function is one of research and dissemination. The Evaluation Support System, then, is a means of evaluating the program rather than the student.

One of the major means of student evaluation is the utilization of pre- and post-measures of performance with respect to the objectives of each individual module. On the basis of pre-test performance, a student might be asked to: (a) make up deficiencies before starting a module, (b) begin a module with the first instructional experience or enter the module at some advanced point, or (c) demonstrate that he can already meet the objectives of that module and proceed to another module pre-test. Post-assessments are provided for each module. In addition, opportunities are provided for students to engage in special remedial activities before proceeding to other modules.

Not all of the pre- and post-measures are necessarily tests; they range from written reports and essays to behavioral assessments. However, the use of tests is heavily ingrained in the program, and these instruments would have to be developed, should this program model be implemented.

In some cases, a student might be required to repeat the module one or more times until he demonstrates his proficiency, for example, in some phase of teaching. The modules of the Methods and Curriculum, Child Development, and Teaching Theory and Practice Components, which call for a concurrent teaching experience, also serve as means of evaluating student performance.

Mitzel's proposed evaluation strategy, which requires presage, process, and product measures, has been used as a basis for evaluation in this program model. The rationale undergirding the use of this evaluation scheme is provided in detailed form on pp. 486-490 in the Final Report. However, the program model developers have provided a very simple rationale on p. 26, in which they state that evaluation is essential to good program construction, as a feedback technique, operating from the level of the simplest module to the program as a whole.

RESPONSIVENESS TO SOCIETAL AND PROFESSIONAL NEEDS

The program model is viewed by this writer as responsive to societal and professional needs in the following ways:

1. It reconceptualizes the parameters of teacher education by including in this process personnel from public schools, educational industry, the university, and other educational agencies. This type of involvement enables each group to make a unique contribution, thereby providing the others with assistance not usually accessible.

2. It provides flexibility in entry, exit, and re-entry into the program. It is so designed that, should a student decide to terminate professional study upon completion of the junior, or pre-professional year, the academic credit accrued during that year could be translated into electives in a college of liberal arts or some other department. The student could apply these elective credits to graduation requirements and graduate from the university a year later without penalty. This is an advantage not available in many universities at the present time.

3. Individual differences are recognized. Students may continually change groups and seminars within the program, so that a student from one of the slower moving groups could join a seminar group working at a more advanced level, should he want or need to progress more rapidly. This is one means of providing for individual differences and making the program somewhat self-pacing.

4. Opportunities for personal and professional growth are offered. The first module of the Professional Sensitivity Training Component is designed to help the student become more aware of himself as a person, thus setting the foundation for future professional personal decision-making, and establishing more functional professional interpersonal relationships.

5. Experiences are provided to aid students in decision-making. Microteaching, designed to be done in a scaled-down version of the classroom, aims to create a greater awareness of and sensitivity to one's own teaching behavior. This experience in microteaching, coupled with tutoring experience in the junior year, should help students make more rational decisions about whether to pursue a professional program or to terminate professional work and pursue a degree of a different nature.

6. Students are offered a variety of teaching experiences. Students, in their tutoring experiences, should have an opportunity to tutor several children during the year. These children should represent different age levels (from nursery school through intermediate grades) and cultural and social backgrounds, and tutoring should be done in several subject fields. Students, then, would have some contact with younger and older children, and with various socioeconomic groups.

7. Opportunities for specialization are provided. The fifth, or resident, year would enable students to work in Resident Centers representing a variety of types of teaching institutions. For example, one Resident Center could be a private nursery school or Head Start center for students wishing to specialize in nursery school teaching. Another center could be an elementary school in a culturally-disadvantaged section of a large urban center, while others could involve schools situated in suburban or remote rural communities.

8. Additional professional preparation is offered. The fifth year is designed for developing and refining skills and knowledge learned in previous years and a specialization that is unique for each student. In this way, a teacher may be trained as a generalist or a specialist, according to his individual talents and/or desires.

9. Provision is made for in-service education. Personnel from the public schools and other educational institutions involved in the program are provided with an ongoing in-service education and a continual feedback between them and the university.

10. Opportunity is provided for student involvement in recent trends and issues. During the resident year, students will have the opportunity to participate in a series of modules dealing with the impact of social change on schools. A portion of these modules will focus on the so-called "technological revolution," as well as problems involved in "social justice."

UNIQUE CONTRIBUTIONS

The program model developers state that the program is fundamentally different or unique because it is designed to educate professional teachers in new ways of (a) perceiving situations, (b) realizing existing alternatives, (c) thinking, feeling, and deciding on courses of action, and (d) taking action through new ways of behaving. The developers also suggest that it may be unique because of the way in which the best of the new and old have been conceptualized in a new configuration.

In this writer's opinion, several other aspects of the program model are unique, if "unique" is defined as "significantly different from what exists at present" in teacher education. In that respect, the following are some unique aspects of the Syracuse program model:

1. It is largely self-paced, allowing a student to progress through a series of modules at a rate comfortable and/or reasonable for him.

2. The student is allowed to select his own counselor-advisor, with whom he works on a regular basis. This relationship between student and counselor-advisor is an enabling relationship combining the talents of the counselor with the talents of a generalist in the field of elementary education.

3. The student may participate in one of the student-controlled enabling seminars of about twelve students each. These groups meet once each week and are designed to help students discuss, integrate, and reflect on educational questions that are of concern to them.

4. The development of the program is through a condition of protocooperation, or interdependence of the university, public schools, and educational industry and/or regional laboratories.

5. Students are given the opportunity to experience the field of education at both a theoretical and practical level of engagement with elementary school pupils in both tutorial and microteaching episodes.

6. During the fifth, or resident, year, students are assigned to a Resident Center, with two students sharing a classroom. These students are assimilated into the school system and are able to work with older, more experienced teachers.

7. Students are encouraged to clarify and explore performance goals for themselves, define them operationally, and help plan a curriculum to sharpen their strengths and remedy their weaknesses in light of their goals. That is, they are expected to take responsibility for their own learning.

8. The instructional techniques listed in a previous section are utilized to a great extent. Some of these techniques are presently in use in teacher education programs, but on a much more limited basis.

MODEL REVISION

One basic methodology utilized for keeping the program model current is its emphasis on "action." The program model is an action model, in which it is intended that students engage in a constant give-and-take with the environment. Since the environment will be continually changing, students will need to change to interact effectively and positively with it. The model also emphasizes applying effective approaches to new problem situations. If this approach is implemented, the program would, of necessity, be continually updated.

Much emphasis is placed upon research and dissemination. Promising new practices in teacher education and the differential effect of the program model on students of different abilities, talents, and personality characteristics are noted for the purpose of revising and/or improving the program periodically.

Educational industry and regional laboratories, collaborating with the college of education and the public schools, could simulate the program or portions of it so as to predict material development needs, develop instructional materials, and pilot the use of these materials in the tutorial and microteaching centers. With this research and development aspect, the program could undergo constant revision and updating.

Perhaps the most basic method for keeping the program model current is through the students themselves. The program aims to create elementary school teachers who, through experience, have learned to be self-directed learners. The assumption is that by having experienced such an approach to education in their own training, they will become teachers who have the repertoire of skills and knowledge necessary to assist their pupils toward becoming more self-directed learners. In this way, the program should be continually supplied with "new blood" and fresh ideas.

RELATIONSHIP TO GENERAL EDUCATION

A Liberal Education Component, in conjunction with additional liberal arts studies, constitutes the entire freshman and sophomore years and approximately half of the junior year. This Liberal Education Component consists of eighteen hours of liberal education, supplemented by varying hours of liberal arts education, depending on the requirements of an adopting college.

The Liberal Education Component is designed to enable students to perceive themselves and the world in new ways, to realize the existing alternatives in given situations, to think, feel, and decide on a reasonable basis. The goals of the component are basically process rather than product. It is proposed that the staff for this component be drawn from the faculty of the university or college at large, in order to provide a series of interdisciplinary experiences for the students.

The substance of the Liberal Education Component is intended to synthesize the liberal arts in a manner that will enable prospective teachers to know or to know how to master "the what" of teaching. Although it is not professional training, the program model developers hope that it will help potential teachers become aware of the "methods" of learning and teaching. The developers also intend for this component to be potentially valuable to a number of professional programs in addition to the educational program.

FEASIBILITY

The program model developers suggest several points that deserve consideration by any institution that might wish to implement any or all portions of this model. It is possible that an institution's attitude toward these points would affect the feasibility of implementing such a program. Some of these considerations are described here.

1. Since universities and colleges differ in admissions policy, it is recommended that each institution set its own requirements for admission to the Liberal Education Component. The character of the student body would, then, reflect that institution's particular policy. With this in mind, the staff would need to arrive at some consensus concerning the type of student it would wish to accept into its elementary education program.
2. It is recommended that a student stay with one advisor throughout the Liberal Education Component program. This advisor's function would be taken over by the advisors of the Self-Directed Component when the student entered pre-professional training. This continuity, while highly desirable, might be difficult to achieve, particularly on a large campus with a relatively large turnover in staff.
3. This program model has been developed by a staff from an institution, a university, for some other potential adopter. That adopter should determine the specifics of the program, develop the real operational objectives, develop the instructional experiences, measurement instruments, and support systems, and the implementation of the program should be done cooperatively by the people who will be affected by the program. If this is kept in mind, adoption by another institution should be relatively simple, providing the staff is willing to call upon personnel outside their own department for assistance, and to recognize the value in doing so.

4. The model calls for a diversity of types of Teaching Centers during the senior professional year and a diversity of Resident Centers during the fifth year of the program. At the Resident Center, residents would be supervised by the Director of the Resident Center and a team of clinical professors. The facilities and personnel should present no insurmountable barrier in a city, but the actual implementation of such a proposal would require good public relations and the development of complete trust among the cooperating institutions. Laying the groundwork would be a large task, and an extremely important one.

5. This program model depends on an open system staffed by professional educators who are: (a) open to change, (b) trained to adapt to change, and (c) provided the time, the rewards, and the supporting structure to be able to be dedicated to elementary teacher education as a primary function of their professional life. Keeping in mind the typical staff present in a university, public school, or other educatonal institution at the present time, this would seem to present a real challenge, as many of the reward systems in these institutions do not coincide with these qualities. However, it seems to this writer that, until this portion of the implementation stage has become a reality, there is no need to proceed further. Any attempt toward change must be initiated by people who are, themselves, open to change.

6. The inclusion of sensitivity training in a program such as this presents some problems in that, up to this point, it has not been made operational. To date, very few teacher education institutions have included sensitivity training as a part of their program. Therefore, although widely used in various settings, sensitivity training remains largely untried and untested as a dimension of teacher education. With the personnel and facilities available in Guidance and Counseling and Psychology through a university, implementation should be more feasible.

7. Public school personnel, professors of education from colleges and universities, and people from educational industries and regional laboratories need to be involved initially and deeply in the planning. This, again, should present no unique difficulties, providing that all groups are made aware that they are of equal importance. This might require the work of someone skilled in the area of public relations, who is aware of the capabilities of each group.

8. Universities, because of their value system and consequent reward systems related to research and publication, tend to be less concerned with program development. University faculty members are usually not rewarded highly for spending a great deal of time and energy on curriculum matters. In contrast to smaller institutions, the larger university is typically much more unwieldy. This makes the induction of formalized change into the university structure a difficult and time-consuming affair. However, if a staff is willing to recognize its reward system, this problem should be remedied in time.

9. The role of the public school teacher and professors at some colleges has not included much in the way of responsibility for decision-making on matters related to curriculum, organization, or personnel. This would seem to present no problem; most professional people, in this writer's estimation, are capable of rising to the level of responsibility required of them, if only given the opportunity.

RELATIONSHIP TO RECOMMENDED STANDARDS IN TEACHER EDUCATION (NCATE)

One set of criteria by which the program models may be evaluated, should they be implemented, is that of the newly-revised NCATE Standards. Therefore, the following is an attempt to analyze the Syracuse program model in relation to those standards.

Design of Curricula

> Standard: Teacher education curricula are based on objectives reflecting the institution's conception of the teacher's role, and are organized to include general studies, content for the teaching specialty, humanistic and behavioral studies, teaching and learning theory with laboratory and clinical experience, and practicum.

The Syracuse program model recognizes the necessity for educating teachers who can function well in the elementary school as it now exists, who can adapt to change, and who can themselves act as change agents. With this goal in mind, the program model provides for general studies through its Liberal Education Component, for content for the teaching specialty by means of its Methods and Curriculum Component, for humanistic and behavioral studies particularly in its Self-Directed and Child Development Components, and for lab and clinical experiences by means of the Teaching Theory and Practice Component and the resident year experience.

Throughout all these components and experiences, the institution's recognition of the need for teachers who can act and react responsibly is stressed. This is emphasized in the Self-Directed Component.

The General Studies Component

Standard: There is a planned general studies component requiring that at least one-third of each curriculum for prospective teachers consist of studies in the symbolics of information, natural and behavioral sciences, and humanities.

The area of general studies is provided for in this program through the Liberal Education Component, consisting of eighteen hours of liberal education concerned with the Social Sciences, Natural Sciences, and Humanities.

Content for the Teaching Specialty

Standard: The professional studies component of each curriculum for prospective teachers includes the study of the content to be taught to pupils, and the supplementary knowledge, from the subject matter of the teaching specialty and from allied fields, that is needed by the teacher for perspective and flexibility in teaching.

The acquisition of the knowledge that is to be taught to the pupil is provided in the Methods and Curriculum Component, the content of which deals with language arts, reading, social science, science, and mathematics.

The supplementary knowledge that might be needed by the teacher as a background for his teaching specialty is provided through the Liberal Education Component, the Self-Directed Component, and the Social-Cultural Foundations Component, which emphasize those aspects of education that tend to broaden a teacher's viewpoint.

Humanistic and Behavioral Studies

Standard: The professional studies component of each curriculum for prospective teachers includes instruction in the humanistic studies and the behavioral studies.

The study of the problems of education, or humanistic and behavioral studies, is provided particularly through the Social-Cultural Foundations Component, which assists the students in understanding the institution of education in American culture.

Teaching and Learning Theory with Laboratory and Clinical Experience

> Standard: The professional studies component of each curriculum includes the systematic study of teaching and learning theory with appropriate laboratory and clinical experience.

Teaching and learning theory are provided by means of the Teaching Theory and Practice Component, and laboratory and clinical experiences are provided by means of microteaching experiences, individual and small group tutoring, senior year assignment to a Teaching Center, and fifth or resident year work in a Resident Center, where two residents share responsibility for a classroom.

The last two experiences also fulfill the Practicum standard, which states:

> The professional studies component of each curriculum for prospective teachers includes direct substantial participation in teaching over an extended period of time under the supervision of qualified personnel from the institution and the cooperating school.

Control of Basic Programs

> Standard: The design, approval, and continuous evaluation and development of teacher education programs are the primary responsibility of an officially designated unit; the majority of the membership of this unit is composed of faculty and/or staff members who are significantly involved in teacher education.

In the Syracuse program model, the responsibility for the above factors is shared by university and public school personnel, personnel from educational industry and other educational agencies such as a regional laboratory and research and development centers, as well as students in the program. The design and approval are basically under the jurisdiction of the former groups; however, the students in the program play a major role in evaluation and development.

Competence and Utilization of Faculty

> Standard: An institution engaged in preparing teachers has full-time faculty members in teacher education, each with post-master's degree preparation and/or demonstrated scholarly competence, and each with appropriate specializations. Such specializations make possible competent instruction in the humanistic and behavioral studies, in teaching and learning theory, and in the methods of teaching in each of the specialties for which the institution prepares teachers. There are appropriate specializations to ensure competent supervision of laboratory, clinical, and practicum experiences.

Although the Syracuse program model does not deal specifically with the level of education of personnel, it does stipulate that the above areas be included in preparation of teachers. It outlines, quite specifically, the responsibilities of personnel in supervision of laboratory, clinical and resident experiences.

Faculty Involvement with Schools

Standard: Members of the teacher education faculty have continuing association and involvement with elementary and secondary schools.

With the system of protocooperation utilized in this program model, there is a continuous involvement and association of these individuals. In fact, the "teacher education faculty" is not only composed of university personnel but also personnel from those areas mentioned under Control of Basic Programs.

Admission to Basic Programs

Standard: The institution applies specific criteria for admission to teacher education programs; these criteria require the use of both objective and subjective data.

Criteria for admission to the program are not established in the Syracuse program model. The developers state that, "Since universities and colleges differ in admissions policy, it would be presumptuous at best to set a guideline for student admission into the (Liberal Education) Component. Therefore, it is recommended that each institution set its own requirements."

Retention of Students in Basic Programs

Standard: The institution applies specific criteria for the retention of candidates in basic programs who possess academic competencies and personal characteristics appropriate to the requirements of teaching.

Throughout the program, candidates are continually evaluated by means of pre-tests and post-tests for each module, evaluation of teaching ability in microteaching, tutoring, and other teaching situations, and discussions with counseling-advisors.

If a student's tests demonstrate that he is unable to continue on to the next module, remedial activities are provided. He may also be required to repeat a module one or more times until he is able to demonstrate his competency in a given area. The teaching experiences in the Teaching Theory and Practice Component allow for continuing evaluation of a student's capabilities in the classroom.

The Professional Sensitivity Component allows for an assessment of a student's personal characteristics. This is, in part, a self-assessment, but much of this self-awareness is gained through interaction with others.

A series of evaluative devices based upon concepts in the curriculum fields of English, social studies, mathematics, and general science are to be administered to all students in the pre-professional year. Wherever weaknesses are indicated, programed learning experiences will be provided for students.

Counseling and Advising Students in Basic Programs

Standard: The institution has a well-defined plan for counseling and advising students in teacher education.

Through the Self-Directed Component, the student selects a counseling-advisor with whom he works on a regular basis. This position combines the talents of the counselor with the talents of a generalist in the field of elementary education.

One counseling-advisor would hopefully remain with the student throughout the Liberal Education Component; when the student enters pre-professional training, a second counseling-advisor would replace the first and remain with the student throughout the remainder of his training.

Student Participation in Program Evaluation and Development

Standard: The institution has representative student participation in the evaluation and development of its teacher education programs.

Students in the Syracuse program model are given the opportunity to take part in the evaluation and development of the teacher education program by means of "enabling seminars" made up of about twelve students each. These groups might meet once each week to discuss, integrate, and reflect on educational questions that are of genuine concern to the students. The students might also air their views in the student-controlled weekly newsletter, a forum for student opinion.

Materials and Instructional Media Center

Standard: A materials and instructional media center for teacher education is maintained either as a part of the library, or as one or more separate units, and is adequate to support the teacher education programs.

The Syracuse program model provides for a Facilitation Center, which is designed to coordinate and facilitate the counseling-advisement, the newsletter, and the functioning of the enabling seminars. Its resources would include T-group trainers, a curriculum library, occupational specialty information, and what are termed "stimulus media." It is also the purpose of this Center to offer student audio-visual supplies, curriculum materials, and duplication services needed for their work in the program. A further function of the Center would be to coordinate periodic meetings of the counseling-advisors who would prepare reports to the program faculty and students summarizing feedback and general comment the counseling-advisors receive in their one-to-one work with students.

Physical Facilities and Other Resources

Standard: The institution provides physical facilities and other resources essential to the instructional and research activities of each basic program.

Besides the Facilitation Center, the Syracuse program model also makes provisions for seminar rooms, Resident and Training Centers, and learning carrels.

Evaluation of Graduates

Standard: The institution conducts a well-defined plan for evaluating the teachers it prepares.

The major means by which the Syracuse program model provides for evaluation of its teachers is through the Resident Program. The resident year, or fifth year, includes the academic year, plus the summers preceding and following it.

During this time, two residents jointly share the responsibility of a classroom in a Resident Center (public school). Each is paid one-half salary. The residents are supervised by the Director of the Resident Center and a team of clinical professors who are experts in the field of instructional materials, instruction, curriculum, and measurement.

The Resident Center director and clinical professors would also conduct a special problem seminar growing out of the teaching problems experienced by the student residents. In this way, an ongoing evaluation may be accomplished.

Use of Evaluation Results to Improve Basic Programs

Standard: The institution uses the evaluation results in the study, development, and improvement of its teacher education programs.

In the words of the program model developers, "Formative evaluation will provide the means by which intelligent changes can be made in the program." To this end, the program model has set up a detailed evaluation system, which includes methods for detecting needed changes in the program, for systematic collection, organization, and analysis of information, and for collecting and implementing decisions made by the module staff, students, and others involved in evaluation of the program model.

Long-Range Planning

Standard: The institution has plans for the long-range development of teacher education; these plans are part of a design for total institutional development.

The developers state that they are very much aware that they have created a program model that can be, rather than one that is.

The fact that Syracuse has developed this program model would seem to indicate long-range planning on the part of that institution. However, this writer has no way of knowing whether this planning includes total institutional development.

THE UNIVERSITY OF SYRACUSE PROGRAM MODEL

Analysis by Katy Gould

RATIONALE

The Syracuse program model is dedicated to the purpose of educating teachers to be able to help children understand, adapt to, and change their world. It proposes a teacher education program that is open and pluralistic in order that beginning teachers may both adapt to and bring about change.

Although it does not define either the schools of the late 1960's or innovations that could take place by the year 2000, this program model is based upon such possible change. Rather than stating experience or research as rationale, six basic assumptions are presented.

1. The program model should be a pluralistic one, encompassing different views of teachers, public schools, teacher education institutions, and educational industrial organizations.

2. Skilled teachers are needed for current and changing schools. Such teachers should be self-directed. To meet these needs the program should be evaluated and revised through dialogue between students, teachers, and researchers.

3. An open system should be employed that can change via an intent (hypothesizing)--action (experimenting)--feedback (measuring) renewing process. As such, the program should be scientific, but humanizing. It should function in an open "life-giving" cycle.

4. Needs for teachers in the schools of the year 2000 should be met through in-service teacher education.

5. Self-pacing should be encouraged in order to meet needs of individual learning, interests, and concerns.

6. These needs should be met through a protocooperative effort between teacher education institutes, public schools, and developers of educational materials.

These assumptions, increased since to eighteen, are supplemented throughout the program model by individual and more specific rationales for each of seven program components.

Without specifying teaching tasks, the rationale for the program model components is based upon "the best that we know today about teacher training," personal and social change and the impact of all three on the public schools. Such a program assumes collaborative multi-institutional planning and education bewteen (1) a university college, (2) public and nursery schools, and (3) educational industries and agencies. None of these alone has the sole function of training elementary school teachers. In this protocooperative endeavor each would assist the other. The public school, for instance, would become involved in the education of pre-service teachers, rather than assuming the sole function of educating children. Such a protocooperative organization developed and selected specifics of this program model, its objectives, experiences, measurement instruments, support systems, and ways of implementing the program.

COMPONENTS

Following a pre-professional component of liberal arts studies are six components built to extend pre-professional themes. Rationales for each are generally implied, primarily as goals, rather than explicitly stated. Components are initially explained in generalities and basic assumptions without specifying the particular teaching tasks desired as outcomes. To best understand the particular prerequisites, modes of instruction, and instructional objectives, the reader should refer to the specific modules rollowing the explanation of each component. As seen in these modules, the student is given opportunity to gain knowledge and understanding of each of the six professional components during the junior-preprofessional year. The student should thereby be given the opportunity to deal with theoretical and practical matters of teaching and to decide whether or not to enter the teaching field.

The component modules are offered as illustrations, not as prescriptions. Each is to be considered open and pluralistic in order to develop teachers who are self-directed and open to change. Philosophically, however, the fact that the modules are structured seems to contradict the open and pluralistic rationale basis.

The five-year program is developed sequentially. The first two and one-half years are devoted to liberal arts studies through a liberal education component. During the third year the liberal arts-education studies are continued and exploratory professional study components are begun. The fourth year is devoted to full time professional study components. The final year, including the summers preceding and following, is a resident year. At this time the student develops and refines the skills and knowledge learned in previous years, and acquires a unique specialization.

In order for the program model to function with the least possible amount of difficulty, three major support systems were established. The Program Support System deals with the development and maintenance of instructional modules and instruction-related activities. This includes testing, providing materials and learning environments, and scheduling. The Information and Evaluation Support System collects data on student performance. This is used by the instructional staff to guide student self-pacing. This system analyzes the effectiveness of the modules themselves, the components, and the total program. It is also responsible for research and dissemination concerning the program model. The Organizational Support System is designed to analyze personnel role characteristics and in-service training.

Philosophically, the Program Support System follows the principle of self-direction as well as student and program evaluation and change. The extent to which these principles are followed will depend upon the implementation procedures of the teacher training institution using the program model.

Specific descriptions of each of the seven program components follows.

Liberal Education Component. This component is designed to balance technology and ideals of democratic processes by developing the student as a whole person. A full year of study is devoted to each of the liberal arts areas: the humanities, the social sciences, and the natural sciences.

An interdisciplinary approach combines the Liberal Education Component with the liberal arts element. The practical and specific liberal arts deal with the arts of language and mathematics and with the content and process of human existence. The Liberal Education Component seeks to build self-directedness and self-reliance on the part of the student.

The Liberal Education Component is based upon the rationale that the student's first three years should contain a structured liberal arts curriculum. Combined with professional training, this should aid as a screening device for the potential teacher candidate. The rationale assumes the need for students to note alternatives for given situations and to make reasonable judgments and decisions. It is designed to give the student a foundation upon which to base his understanding of elementary curriculum content.

To the extent that the Liberal Education Component seeks to prepare students who can work with the uncertainties of the future in education and the world itself, it is consistent with the program rationale. It does lack the consistency of self-direction and self-pacing by presenting a structured set of courses within a prescribed sequence.

Through the humanities course the student is introduced to methods of inquiry and generalization in the study of man's discovery of self. Techniques of scientific observation and objectivity in the social environment are studied in the social sciences. Concepts studied in the natural sciences include "Early Views of the Universe and the Mind of Man."

The Elementary Methods and Curriculum Component. The rationale for this component is based upon the premise that teachers are more than technicians applying skills. They need to be practitioners who adapt methods and materials to their own personality and to each particular situation.

It is felt that the process of acquiring and utilizing knowledge and skills is more important than the actual content learned. For this reason the component emphasizes the process of learning through a problem-resolution approach. The student is to seek input for a problem only after determining a well-defined, meaningful purpose through the process of problem definition and diagnosis. The component is to be taught within the context of actual educational problems being faced by teachers and children in the school situation.

Study in this component begins during the junior pre-professional year with emphasis during the senior professional year. A Professional Sensitivity Training Component acts as a prerequisite for all others in order that students may better know themselves. They deal with progressively more complex problems of teaching, beginning with a one-to-one tutorial practice and progressing to small group microteaching. The students also concentrate on the theoretical materials being learned in the fields of instructional theory, curriculum-making, human development, social-cultural foundations, and sensitivity training. Students work in teams composed of another student partner, a clinical teacher, and one or more clinical professors. Each experience is repeated in different settings, with feedback and evaluation guiding the student's progress.

Within this component the methods for teaching in the five major areas of the curricula would be concurrently studied. Each area is subdivided into specific sections such as the following for Social Studies: locating, organizing, and using information; value examination; and problem-solving. The other four major areas are language arts, reading, science, and mathematics.

The Elementary Methods and Curriculum Component is arranged in five groups or phases:

1. Curriculum Content: Programed instruction in English, science, mathematics, and social sciences.

2. Teacher Description of School Events: Readiness for tutoring by study of child and teacher behavior as related to curriculum.

3. Beginning Teaching Phase: Diagnosis of children's learning and teaching of specific objectives through tutorial and microteaching experience.

4. Advanced Teaching Phase: More complex diagnosis of teaching and learning while teaching is done in school centers.

5. Curriculum Planning: Problems of curriculum and methodology at a theoretical level.

Child Development Component. Governing the design of this component is the assumption that teaching will be affected in positive ways if the teacher can skillfully observe and understand the many dimensions of children's behavior.

Techniques, theories, and normative information of child development are built into modules of this component. Direct observation, or "sensory intake," using different techniques, provides a major process in the component. Another important element is that of contrasting different major developmental or learning theories.

Students are to proceed in linear sequence through the thirteen modules of the Child Development Component. This is justified with the assumption that concrete sensory experiences with children's behavior are needed before abstract conceptualization can be made. An autoinstructional series is used which moves the student from observation of one child in a tutorial situation to the child in relation to the total classroom. Developmental and learning theory studies would follow the observation instruction. Students will study these theories while collecting, analyzing, and comparing data about children.

As a resident teacher the student should use the skills and concepts acquired through this component in structuring, implementing, and evaluating the instructional progress of children.

Teaching Theory and Practice Component. Rationale for the Teaching Theory and Practice Component is built on the assumption that teachers need a set of skills for decision-making processes regarding children, materials, subject matter content, and the school administration.

The decision-making process begins with a plan that is formulated and followed, expectations are evaluated, and new decisions are then made. The student is to consider characteristics of children, teacher, school, community, materials, and subject content as potential means to the teacher's goals. It is a major goal of this component to increase the awareness of possible alternatives for action and to anticipate their outcomes. The student is to analyze his own teaching behavior and its effect on different children. To meet these requisites the modules of the component require the student to:

1. Discriminate teaching behaviors of different teachers.
2. Practice different teaching behaviors according to specific situations and decisions.
3. Examine learner skills, knowledge and attitudes, and prepare appropriate measuring devices.
4. Interpret and apply results of research according to teaching needs.
5. Search own repertory of potential behaviors in decision-making for specific children and outcomes.

Professional Sensitivity Training Component. The content of this component is based upon the rationale that teachers must have appropriate and sufficient information in order to make decisions that will maximize the learning of children. They need to understand the dynamics of intrapersonal, interpersonal, group, and organizational interactions. Training in these areas is referred to as "professional sensitivity training."

Three assumptions for increasing teacher effectiveness are basic to the component: awareness and sensitivity to self as a person, as a teacher of children, and as a member of the educational system. The student should become responsible for and examine his own learning in an atmosphere of openness and honesty.

Social-Cultural Foundations Component. This component is organized around the content and methods of inquiry in the fields of sociology, philosophy, anthropology, political science, and economics. The intent is to relate methods and content, or theory and practice, of sociology and philosophy to education. The component is based on four assumptions of teachers' needs.

1. Understanding of social and cultural factors that affect students, teachers, and schools.
2. Use of certain technical skills of philosophers and social scientists.
3. Understanding of the socio-cultural milieu in which the teacher functions.
4. Skill in analyzing value questions and making value decisions.

These assumptions stem from the belief that teachers should understand the basic social institutions. These are viewed as intellectual problems to be analyzed and reflected in the teacher's technical proficiency. It is assumed that the teacher who understands the social forces affecting the school environment will be a better classroom manager.

This component has a minimal input during the pre-professional years. It seeks to provide an understanding of the school social and cultural dynamics that could make the professional sensitivity more realistic. This component would receive its greatest input during the senior professional year and during the later part of the residence year. Through five modular groups students should come to (1) view themselves in group and organizational interactions, (2) view the teaching act as more than a set of technical skills, and (3) better understand the forces that legislate for and against curriculum and methodological innovation in the elementary school.

The first module group of this component is designed to help the student recognize the impact of culture on the children's and his own attitudes. The second module group should help the student deal with critical thinking and intelligent decision-making through use of logical and critical language. It is placed in the senior year, as is the third module group. By this time students should see schooling as a process of a complex set of relationships capable of being dealt with in a systematic way. This third module group studies the school and the teacher. The fourth module group of the resident year is concerned with the language and logic of instruction. This is included because of the teacher's power to control both his own language and that of the classroom. Education and social problems are studied during the resident year in the fifth module group. Through this module group students study the school as it affects and is affected by other institutions, social forces, and the values of culture.

The Self-Directed Component. Justification for this component is stated through the following assumptions:

1. Students need a full measure of dignity, integrity, and autonomy.
2. Students need to understand and take responsibility for their own learning.
3. Students need enabling structures and counseling support to modify their ideas, values, and resultant behavior in light of new concepts, experiences, and/or evidence.
4. "Research and theory from third force psychology" suggest the importance that learning consider all the factors that comprise an individual's life space at any given moment.

Sensitivity training T-groups of about twelve students each begin during the junior year to aid students in understanding themselves in the dynamics of group interaction. Next, students enter the Task Change: Sensitivity to Self-Direction module. Here the student takes responsibility for analyzing the effect of his own strengths, weaknesses, interests, and values on his teaching. During the resident year self-assessment of the student's own teaching is emphasized.

At least once very three weeks the student meets with his faculty counselor-advisor in order to understand his capacities and needs. In addition, students may meet in groups of twelve in student controlled "enabling seminars" each week. These groups discuss educational questions of concern to the particular group. These ideas are also developed in a student-published weekly newsletter.

Students, during this component, write a "Planning and Goals Paper" describing changes and behavioral goals desired for the children they will teach during their resident year. They also describe any specialized training they believe they may need to accomplish their goals. The goals and plan must be capable of being implemented and assessed by the student and must be supportable by resources of the program. During the resident year the counselor-advisor helps the student assess his teaching in terms of this paper.

OUTCOMES

The general outcomes of the Syracuse program model would be teachers who (1) become increasingly perceptive, (2) view themselves positively, (3) understand and accept their motives for teaching, and (4) have professional values consistent with their personal integrity and the demands of the educational profession. Most important is the objective that students will continually become and behave as committed teachers and persons capable of dealing with a changing school and world.

A basic outcome desired through the Liberal Education Component is to enable students to know or know how to master "the what" of teaching. The student should gain a sufficient foundation upon which to base his understanding of elementary curriculum content. He should become prepared to deal with the uncertainties of the future. Specifically, the goals of the three areas comprising the total component are as follows:

1. The Humanities: Provide the student with an awareness of the concerns, attitudes, tendencies, and discoveries of man in his changing culture.
2. The Social Sciences: Provide the student with an awareness of man's efforts to strive for greater knowledge and live at peace with his fellow men. The student should become aware of himself and society in order to better guide change within children and set a "good" example for them.
3. The Natural Sciences: Provide an understanding of areas in which the scientist works, the methods used, the limitations to findings, and further steps needed to validate conclusions. The student should become better acquainted with processes of decision-making and dealing with change.

In essence, a liberal education is intended to help the student become an effective, self-aware, self-directed teacher.

If the objectives of the Methods and Curriculum Component are fulfilled, the student will acquire a set of skills and related information that could be applied in any curriculum area. Through a problem-resolution process the student would be able to see the degree of success of a resolution and later apply similar resolution procedures to new tasks. The student should become involved in an ongoing series of tasks in which he identifies new problems to be diagnosed and resolved. The student should see curriculum content and knowledge as things to be changed and learned on a continuing basis. The student should acquire a vocabulary for describing and classifying what happens in the classroom. He should also become acquainted with ways of diagnosing learning, of structuring lessons, of suing different materials, and of performing teaching tasks. In so doing, the student should be able to construct and modify curriculum and thereby act as a change agent in education. The student should be provided with the necessary skills and understandings for beginning a tutorial relationship with children in the public school setting. This experience continues during the Child Development Component.

The first objective of the Child Development Component states that students will be able to observe children's behavior carefully, routinely, and objectively. Second, the student will be able to discriminate between different kinds and dimensions of child behavior at different ages and developmental stages. Third, the student should have multiple alternatives for interpreting children's behavior and be aware of possible consequences of each. The student should be able to support inferences and evaluations about children with data. He should be able to use this knowledge to plan for individual differences within the classroom and to work to modify children's behavior.

The Teaching Theory and Practice Component seeks to fulfill two main objectives. First, the student should acquire a theoretical framework for considering the widest possible range of behavioral alternatives open to him. Second, the student should be able to deal with these alternatives in widely differing situations.

The major objective of the Professional Sensitivity Training Component is to increase the student's awareness of and sensitivity to the interpersonal dimensions of all aspects of the total program model. The student should become aware of himself first as a person, then as a teacher in a classroom, school, and educational system.

Five objectives are set forth in the Social-Cultural Foundations Component. The student should understand the social dynamics of educational groups and institutions. He should understand the social, political, and economic forces that affect our schools. He should develop skills in analyzing social situations. He should develop skills in analyzing language as a means of communication of ideas and influencing behavior. Finally, the student should be able to make value judgments and to analyze the value dimensions of educational problems.

The Self-Directed Component emphasizes the development of each student's professional individuality. It should result in teachers who bring about and adapt to change. It should enable the students to examine, judge, and synthesize teaching theories and practices. The student should be able to state his goals, values, feelings, and understandings of teaching. He should then be able to seek the necessary specialization or training to achieve those goals and be able to assess his actual teaching.

INSTRUCTIONAL TECHNIQUES

Instructional procedures for the modules require working independently, in small groups, and in seminars. To facilitate the philosophy of self-pacing and individualizing instruction, small groups and seminars are continually reconstituted according to individual need. A student can be working concurrently in several modules upon the advice of his advisor. There is a preset sequence of study through the component modules. As often as possible these are to be self-directed and include reading and discussion of professional literature, exercises, films, and programed instruction. Among instructional techniques to be employed and considered innovative by the program developers are:

Professional sensitivity training
Simulation
Computer based instruction
Objective analysis of instruction
Behavioral objectives
Largely self-paced, modularized instruction
Video-tape feedback of teaching behavior
Programed instruction
Resident service as a technique for initial
    professional induction
Tutorial and microteaching in Teaching Centers

The process of instruction through the Teaching Centers, which are located in public schools and nursery schools, is further explained in the description of the role of clinic personnel at the centers.

Each course in the Liberal Education Component is divided into panels of about forty-five students. It is possible that three professors, each from a different discipline, could work with a panel in the large or small groups. Faculty from the College of Education and the College of Liberal Arts should work together on content and methodology for these courses.

Interests of both groups of faculty would be coordinated through a policy board and directed by the Program Model Director. Administrators from both colleges serve on this board.

The field experiences provide direct instruction with children. Initially, these experiences are direct observations of children during the Child Development Component. Although recognized as time consuming, this means of instruction is considered more valuable than lectures, films, or readings.

Enabling seminars and faculty facilitators act as vehicles of continuing instruction. Seminars meet once a week with a group determined leader or faculty facilitator. The faculty facilitator could be from any department of the university, but on the program staff, and would serve a non-directive role.

Learning is facilitated through a weekly, student directed and published newsletter. This reports student activities and such things as comments from the enabling seminars.

A diary-type log, kept by each student, is a learning tool used to aid in guidance offered by each counselor-advisor.

Counseling-advisement, the newsletter, and the enabling seminars are coordinated and facilitated by a Facilitation Center. It includes a library, audio-visual and curriculum materials, duplicating services, and resource materials such as open-end films and rooms for student discussions. Each of these is essential to the successful instruction of the students.

One means of instruction is a baseline goal paper written by the student during the first module of the Professional Sensitivity Training Component. Here the student states his thoughts about teaching and, with his counselor-advisor, discusses his potentials and plans his studies. This is analyzed and compared with changing needs and perceptions in the senior year when the student writes a "Planning and Goals Paper."

ROLE OF THE TEACHER EDUCATOR

The title and roles of each educator on the program staff are described below.

Working under the leadership of a Program Model Director are personnel from the program staff, public schools, and education industries. The director also works on a Policy Board with faculty members and administrators from the Colleges of Education and of Liberal Arts. This board carries out objectives of the program, sets curriculum policy (such as a hierarchy of organization for courses), and develops and oversees evaluation procedures of the program. Described below are roles of the program staff with whom the director works.

Faculty facilitators are selected, if desired, by members of the student enabling seminars. They are members of the program staff but need not be from the education faculty.

A Facilitation Center Director is responsible for supervising, training, and evaluating the center's staff and personnel, coordinating the enabling seminars, directing change, and coordinating the center's efforts with those of other systems and personnel by making recommendations to the director of the program model.

A field consultant from the Facilitation Center collects outstanding video-tapes and publications of students. He coordinates work-study experiences during a student's graduate summers. He also coordinates resource materials and the work of counselor-advisors.

A liaison man obtains and disseminates information and feedback from the enabling seminars. He may at the same time be a T-group trainer or a counselor-advisor. When a T-group dissolves, the trainer may become an advisor, faculty facilitator, or liaison man.

Full-time counseling-advisors would be familiar with all aspects and goals of the program. Each might handle sixty or seventy student conferences a month. A counselor-advisor could combine his role with that of faculty facilitator, liaison man, or do research or teaching. This role includes acting as a clarifier with the student, expanding the student's educational understandings, skills, and goals. He would help each student reach his own goals. Use of the baseline goal paper, and later of the final goal and planning paper, helps the counselor-advisor with this task. Reading and summarizing the diary-log of a student also aids the counselor-advisor in his job.

A librarian handles curriculum and specialty materials, resources, their selection and use.

The production center supervisor provides and supervises use of equipment needed for studies and teaching, such as material for the newsletter, transparencies, and video-tapes.

The abstractor-recorder, using a computer to keep records of the student logs, summarizes each student's progress. This information would be made available for advisors of the students. Progress would be considered from both the student's and the advisor's point of view. This same person could also be the computer-programmer.

Personnel within the staff and/or students inspect and process equipment for the Self-Directed Component Resources Center. Audio-visual and study equipment and meeting places are located here near other program facilities.

Staffing the tutorial and microteaching centers would be a center director and clinical professors from the program staff with different specializations, plus a team of specially trained clinical teachers from the public schools. Criteria for selection of the clinical teachers are not stated. They would act as subject-matter diagnosticians and remediation specialists who guide the students in work with children. Training clinical teachers for their role would be done by program staff. As these teachers work with the students new material and instructional needs for the program would evolve. The professors, teachers, and students would work in flexible groups or teams according to student needs. Team cycling is an important process that incorporates the group flexibility and feedback-evaluation ideas. Should students need additional experiences in any given area the student, a student partner, clinical teacher, and professor would plot a recycling process.

EVALUATION TECHNIQUES

In general a feedback principle, established in the rationale, acts as a continual evaluation process. Students act on intentions, or plans and goals, within each component module. Results of actions are analyzed by student and instructors. The program for both the student and the program model itself is developed or modified for future intents and actions according to this feedback.

After completing the Liberal Education Component, the student evaluates his potential as a teacher candidate. The student is better able to make this decision because the pre-professional part of the junior year is structured around six professional process oriented components, rather than isolated liberal arts courses. Proficiency tests are given. Students must demonstrate competency in English, social studies, math, and general science. Should a student lack competency in a given area, he is given the opportunity to make up the deficiency. This is done through special remedial work or programed learning materials.

Specific procedures for student measurement and evaluation are presented on pages 479-493 of the program model. Specifications of evaluation are found in the final portion of each module.

Students are pre- and post-tested in each module. If the student successfully functions with the material he can "test out." If the student is unable to demonstrate the understanding and skills required he is provided independent remedial study wither through extended modules or specially designed study with a faculty member. Students should be able to proceed through the modules at their own pace; however, a suggested time schedule is presented. For example, students should "test out" of the six subject-matter content modules of the Elementary Methods and Curriculum Component by the end of their junior pre-professional year.

Continual evaluation is done by the student and the advisor-counselor using the baseline and the final goals papers. These papers and the diary-logs act as guides for evaluating progress according to the specific goals and needs of each individual student.

RESPONSIVENESS TO SOCIETAL AND PROFESSIONAL NEEDS

Students are prepared as generalist teachers. Should they have a particular interest, such as teaching the disadvantaged or pre-school children, they can request to have their field experiences in Teaching Centers where these special areas could be observed and practiced. In fact, during the resident year students are encouraged to identify an area for specialization. Such an area would generally be content centered, but could focus on a particular group of children. This specialization, however, is not designed to provide for staff differentiation (e.g., paraprofessional, classroom teacher, team-teaching leader).

Through the protcooperative design the program becomes responsive to in-service education and utilizes technology from education industries. The training of clinical teachers should benefit both the students and the public schools. Both the clinical professors and teachers use the senior year modules as a means of in-service education. This provides a continuing education for the clinical staff and would keep professors and teachers in contact with each other's working environment.

UNIQUE CONTRIBUTIONS

Five elements of the Syracuse program model could be considered unique to teacher education: modules, professional sensitivity training, Teaching Centers, resident teaching, and the protocooperative organization.

The six components of the program consist of specific goals within given concept areas. The goals within each component are developed through involvement in a group of modules. The modules, essentially a refinement of the goals, are clusters of objectives. Each module is illustrated by suggested trainee behaviors and possible instructional experiences. Modules are developed for each of the six professional components.

Each module lists prerequisites, suggested placement in the program, estimated completion time, specific behavioral or operational objectives, description of specific instructional activities (method, materials, and media), and techniques of evaluation.

The professional sensitivity training element is described in the Professional Sensitivity Component. It is designed to enable students to acquire the skills and understandings for viewing themselves as teachers. Students are helped to understand and appraise ways in which they affect, and are affected by, those with whom they work as teachers.

Teaching Centers could be staffed by a director who would supervise and coordinate the activities of the clinical professors and clinical teachers. This could involve three clinical professors (for curriculum and methods, measurement, and instructional materials or other specialization areas) and teachers whose classrooms and children would be used for the students' field experiences.

Resident teaching places two students in a classroom, each receiving from the school district half the salary of a beginning teacher, sharing teaching responsibilities. Students would be responsible to both the public school district and the program staff. This experience is optional, but makes it possible for the student to earn a master's degree upon completion of course work the summer following the resident year of teaching.

A protocooperative system of public school personnel, professors of education, and personnel from educational industries and laboratories is designed to insure collaborative relationships on an equal professional partnership basis. Their initial planning sessions call for role clarification and qualifications, definition of responsibilities best fitting each contributor, administrative needs, and procedural arrangement. This organization establishes guidelines for student learnings, instruction and supervision, evaluation, in-service training, experimentation and research, and information dissemination. The protocooperative idea is the foundation upon which the support systems are developed.

MODEL REVISION

Developers of the program model specifically adopted an intent-action-feedback process as a means of student and program evaluation. Input from student records, tests, the student newsletter, the enabling seminars, and the protocooperative board is used to guide revision of the total program and the modules.

The continuing process of materials development for the component modules and for instruction of children would provide the educational industries or laboratories an opportunity to develop and test new materials under actual teacher training conditions and in an actual public school setting.

As suggested earlier in this report, the protocooperative support systems play an important role in model revision. The Organizational Support System, for instance, specifies methods for assessing readiness for change of participants in the protocooperative and creates possible change models. Its responsibility is to develop a feedback network that permits total program and student assessment in order to design needed changes.

RELATIONSHIP TO GENERAL EDUCATION

The liberal arts are often restrictive in aiding the individual student to develop into a sensitive, aware human being. It is the operation, not the content, through which the liberal arts disciplines are intended to contribute to the Liberal Education Component. The liberal arts are intended to serve as central intellectual input that emphasizes the necessary dispositions and skills for coping with the future.

The Liberal Education Component is designed to follow the sequence of the regular college of liberal arts. Meeting these prerequisites in the prescribed chronological order is one means of using this component as a pre-selection center for potential candidates in the teacher education program. Students not successfully meeting the liberal arts prerequisites would be presumed potentially unsuccessful teacher candidates.

FEASIBILITY

The program development team intended the program model to be one that could be implemented immediately. Because faculties of the liberal arts and education colleges cooperatively worked on the design, this could be possible at Syracuse. A campus such as The Ohio State University would not be ready for such a Liberal Education Component without first revising both faculty roles and areas of study. Attitude and understanding of faculty members would affect the success of all or parts of the program model if it were adopted.

The protocooperative aspect of the program would require identification of interested university faculty, public schools, and educational industries and laboratories. Time would be needed to define goals for a program fitting the particular university incorporating this portion of the program model. Necessary personnel roles and their duties would have to be specified. Contributions such as personnel, materials, technological information, and finances would have to be designated for each cooperative. This would all require time, working facilities, and leadership.

Personnel, materials, and working facilities would be needed for each of the Support Systems. Again, lack of time, leadership, and cooperative goal planning and facilitating could be detriments to the success of such a program on a campus other than Syracuse. The modules developed for the Syracuse program model through the Support Systems require special equipment, staff, and facilities. The initial expense in personnel time and materials could prevent use of the modules in other universities. The program model designers specified patterns of teaching techniques and learning activities appropriate for each objective. Because these rely heavily on media, the program would be costly at its onset. There would also have to be a sufficient number of students working in a Teaching Center or on a specific module to make its operation worthwhile. The behavioral objectives, however, could be used with other instructional methodology.

RELATIONSHIP TO RECOMMENDED STANDARDS IN TEACHER EDUCATION (NCATE)

1. Standard: Teacher education curricular are based on objectives reflecting the institution's conception of the teacher's role, and are organized to include general studies, content for the teaching specialty, humanistic and behavioral studies, teaching and learning theory with laboratory and clinical experience, and practicum.

The program model is based upon knowledge of teaching as it exists today, but gives evidence of no task analysis. Each of the suggested areas of study is included in either the Liberal Education Component or modules of other components.

2. Standard: There is a planned studies component requiring that at least one-third of each curriculum for prospective teachers consist of studies in the symbolics of information, natural and behavioral sciences.

Courses, seminars, reading, behavioral objectives, and evaluation techniques are presented for each area mentioned in the standard. Students study humanities, social or behavioral sciences, and natural sciences during their first two and one-half years. The program model does not indicate that these requirements were checked with any state or regional accreditation standards. Students must meet minimum requirements either to enter the professional components or to continue at the university in a college other than that of education.

3. Standard: The professional studies component of each curriculum for prospective teachers includes the study of the content to be taught to pupils; and the supplementary knowledge, from the subject matter of the teaching specialty and from allied fields, that is needed by the teacher for perspective and flexibility in teaching.

Students are taught subject matter content, but what they will teach pupils is not stated directly. They are gradually led to develop perspective and flexibility in teaching, as well as to develop at least one specialty, with these experiences centering on the resident year of study. Clinical professors and teachers assist in developing the specialized areas. An intent-action-feedback system is used for evaluation and program revision.

4. Standard: The professional studies component of each curriculum for prospective teachers includes instruction in the humanistic studies and behavioral studies.

Humanistic and behavioral studies are particularly stressed in this program model. A basic intent is for the student to understand man in his world. These studies are oriented toward the problems of education in the respect that the colleges of liberal arts and of liberal education worked together in developing the modules. References include those of Mooney, Bloom, Combs, and Green. These references are interpreted with students in seminars. The studies comply with general university standards so that a student may transfer to another university college area of he so desires.

5. Standard: The professional studies component of each curriculum includes the systematic study of teaching and learning theory with appropriate laboratory and clinical experience.

Separate learning components are provided in each of these fields. Emphasis in the Child Development Component is on theories of Skinner and Piaget. The field experiences provided in the Teaching Centers provide practicum for these studies. Each year the students spend progressively more time observing and practicing in the public schools through the Teaching Centers.

6. Standard: The professional studies component of each curriculum for prospective teachers includes direct substantial participation in teaching over an extended period of time under the supervision of qualified personnel from the cooperating school.

Planning is provided by the protocooperative aspect. In the supervised Teaching Centers students progress from tutoring, to microteaching, to half-day teaching, to resident teaching with a partner. Clinical professors and the staffs of the Support Systems help implement this progress. There is no stated definite supervision load.

7. Standard: In planning and developing curricula for teacher education, the institution gives due consideration to guidelines for teacher preparation developed by national learned societies and professional associations.

Professional journals are recommended for use in the modules. National learned societies are not referred to as such for resources. Scholars such as Mooney, Bloom, and Krathwohl were read as resources in program development and are used as student references. The program intends to use university specialists working cooperatively in continual evaluation and change of the program model. Teaching and learning theory are combined with clinical experience in the six professional components and the Teaching Centers.

8. Standard: The design, approval, and continuous evaluation and development of teacher education programs are the primary responsibility of an officially designated unit; the majority of the membership of this unit is composed of faculty and/or staff members who are significantly involved in teacher education.

The policy board fills this role and has a designated, representative membership. They use and add to present knowledge and facilities as needed in the component-modules and as indicated through the Support System.

9. Standard: The institution applies specific criteria for admission to teacher education programs; these criteria require the use of both objective and subjective data.

Other than to state areas in which the pre-professional student must develop competencies to enter the professional components, admission methods and criteria are not specified.

10. Standard: The institution applies specific criteria for the retention of candidates in basic programs who possess academic competencies and personal characteristics appropriate to the requirements of teaching.

Evaluation is done by the counselor-advisor, using performance information, as the student works in each component module, the diary-log, and the module post-tests. The program model does not address itself to the requirements for academic competence specifically, or the exact personal characteristics either desired or not desired in students. Specific academic deficiencies can be made up through remedial studies.

11. Standard: The institution has a well-defined plan for counseling and advising students in teacher education.

This is a particular strength of the program model for Syracuse. It functions through the Facilitation Center.

12. Standard: The institution has representative student participation in the evaluation and development of its teacher education programs.

Students make suggestions for changes in the program through their enabling seminars and the newsletter, as well as through discussion with the counselor-advisor. The specific concerns of students are not stated.

13. Standard: The library is adequate to support the instruction, research, and services pertinent to each teacher education program.

A full-time librarian keeps the material current, pertinent, and accessible. The library is placed where students and faculty can use it easily and near the other program facilities. Library expenditures during the past five years are not offered in the program model.

14. Standard: A materials and instructional media center for teacher education is maintained either as a part of the library, or as one or more separate units, and is adequate to support the teacher education programs.

This is supervised by the Support Systems and is to be used by faculty and students. Specialties and grade levels of materials are not given. A wide array of instructional media is available: films, filmstrips, simulation materials, audio-video tapes, sound tapes, transparencies, programed learning materials, and duplicating services.

15. Standard: The institution provides physical facilities and other resources essential to the instructional and research activities of each basic program.

The program model addresses itself to this standard to the extent that the need for such facilities is presented.

16. Standard: The institution conducts a well-defined plan for evaluating the teachers it prepares.

Specific modular objectives, information from enabling seminars, student diary-logs, and the counselor-advisor provide evaluation information for each student. The program model does not state how data are collected about students once they enter the teaching field. Nor does it state ways of discovering and learning about new evaluation means or the percentage of teachers actually entering the profession from the institution.

17. Standard: The institution uses the evluation results in the study, development, and improvement of its teacher education programs.

Specific strengths and weaknesses of teachers trained in the program could not yet be discussed. It is the intent of the program developers to use such information to guide program change.

18. Standard: The institution has plans for the long-range development of teacher education; these plans are part of a design for total institutional development.

Program model designers refer to studies and research being done to improve its teacher education programs. No particulars concerning these are given. The policy board and Support Systems are involved in continual re-evaluation and change in the program. Long-range goals for the program are not specified. The rationale states the desire to keep abreast of the changing world and the concurrently changing needs of education for and by teachers.